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FEBRUARY, 1912 No. 1

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TABLE OF CONTENTS

FEBRUARY, 1912

Lake Placid meeting of American Home Economics Association 1
Food administration: Plan, equipment, cost, and organization of kitchens and dining rooms, Annie Dewey 2
The lunchroom in business, Gertrude Sanborn 9
Control of insect pests in institutions, E. Porter Felt 16
Some general principles applicable to the purchasing and handling of supplies for public institutions, Henry C. Wright 26
Uniform accounting for institutions, William Morse Cole 39
Tenement house supervision, Emily Wayland Dinwiddie 51
Graphic charts, Melvil Dewey 55
The respiration calorimeter of the U. S. Department of Agriculture and work undertaken with it, C. F. Langworthy 57
State and municipal documents as sources of information for institution managers and other students of Home Economics, C. F. Langworthy 59
Principles of management applied to scientific management, Royal R. Keeley 74
Market inspection work carried on by the Women's Municipal League, Amy Aldis Bradley 75
Concerning institutional management, Sarah Louise Arnold 79
Business session of the Lake Placid Meeting 83
Bibliography of Home Economics literature, Dec. 1, 1911 84
Minutes of the fourth annual meeting, American Home Economics Association 90
Home Economics in 1912, Isabel Bevier 90
Secretary's report 94
Treasurer's report 95
Program of the fourth annual meeting 102
Minutes of the council 105
Editorials 106

From photograph loaned by U. S. Department of Agriculture.

Ceres Hall, the Woman's Building at the North Dakota Agricultural College.

THE

Journal of Home Economics

VOL. IV. FEBRUARY, 1912 No. 1

LAKE PLACID MEETING OF AMERICAN HOME ECONOMICS ASSOCIATION.

INSTITUTION ECONOMICS SECTION.

The meeting of the Administration Section of the American Home Economics Association was held at Lake Placid, June 27–July 1, 1911. The program and a brief report of the meeting was given in the October number of the JOURNAL OF HOME ECONOMICS while in this number will be given a brief report of the discussions and several papers presented at the meeting.

It was fitting that the first session be opened with a tribute to Mrs. Ellen H. Richards. Mrs. Melvil Dewey, chairman, in calling the meeting to order stated that while this was the second annual gathering of the Administration Section it was the tenth conference on Home Economics which has met at the Lake Placid Club. During the ten years existence of the Lake Placid Conference two of its annual meetings were by special invitation held elsewhere, in 1903 in Boston in joint session with the Manual Training Section of the National Education Association and in 1908 by request at Chautaqua.

Mrs. Dewey said: "In looking back over these years we miss today one who has been our leader from the beginning, to whom is due the wise guidance and unusual progress which has marked this work. The joy of service was hers, the highest ambition which inspires great discoveries in any field. With her, 'achievement was but the starting point to new endeavor.' Her ideal of happiness was well defined by Mme. de Stael as 'constant occupation upon some desirable object with a continued sense of progress towards its attainment.' The key note of unselfish service which she struck is sounding today. Those

Ceres Hall, the Woman's Building at the North Dakota Agricultural College.

who knew her personally can never forget it and by its inspiration we may go on with continued and increasing progress."

In the address of welcome by Mr. Melvil Dewey there was emphasized the present day need for an exchange of the results of experience and experiment in the effort toward efficiency in work involving the care of large groups of persons and the part which the Administration Section of the American Home Economics Association could play in working out this problem.

The following papers were read and discussed at the several sessions:

FOOD ADMINISTRATION: PLAN, EQUIPMENT, COST, AND ORGANIZATION OF KITCHENS AND DINING ROOMS.

ANNIE DEWEY.

Lake Placid Club.

The problem of feeding large numbers successfully requires that the administrative plant be specially adapted to the type of institution, numbers to be fed, kind of menu required, length of meal hours, facilities for keeping food warm, and funds available, and also to the possibilities for growth.

Institutions may be divided roughly into five types: (1) Educational—schools and colleges; (2) philanthropic—asylums, homes, hospitals, orphanages, sanitariums, settlements; (3) commercial—hotels, summer resorts, restaurants, lunch and tea rooms; (4) social—clubs, settlements, camps; and (5) government, state, county, municipal—military and naval barracks, almshouses, prisons, houses of detention, reformatories.

A definite plan of a working plant of the social type, a private club, equipped with modern machinery and labor-saving devices to care for 200 guests and about 65 employees, is taken as a working basis. The menu, meal hours, and general conditions stand about midway between college dining rooms and elaborate hotels. The space devoted to food preparation is 40 by 80 feet. (See plan on page 7 .)

The kitchen is 30 by 40 feet, one story, with seven windows on each side and a lantern overhead having the same number of windows, giving the best possible light and ventilation. The floor is of comb grained Georgia pine finished with one coat of filler and one coat of

boiled linseed oil; both walls and ceiling are Georgia pine, finished with varnish which can be wiped off easily or washed if necessary. A house open only for a short summer season of three months does not justify tile and expensive construction. The entrance platform, nearly 8 feet above ground, has side railings high enough to conceal ash and garbage cans, with space underneath for fuel. The chimney has a large ventilating flue for carrying off cooking odors, with a hood 28 feet long covering three fire ranges, a charcoal broiler, two kettles for stock and soup, and two vegetable steamers. Other equipment includes the cook's tables with a bain marie and a 16-foot sauce pan rack overhead, a pot sink with drain boards, a plate warmer, a dish washer with scraping and dish tables, a tray and bread tables, an automatic egg boiler with three compartments, and a carving or steam table. The cost of these without steam fittings and connections is $1880.

The pastry room is 20 by 22 feet and contains two working tables, a griddle range, an oven, a pudding steamer, a copper kettle, a sink, a refrigerator, a creamer, and a long counter.

The serving room is 20 by 22 feet and has two glass and silver sinks, with long drain boards, a table, coffee urns, and a cup and roll warmer.

The vegetable room, 18 by 20 feet, contains an ice chopping box, a fish box, a sink, a table and dumb waiter for serving meals for maids on the floor below, and stairways.

The butcher shop, 20 by 22 feet, has a sink, a meat block, a meat bench, a grocery and two cold storage rooms 8 by 14 feet with ice bunkers overhead, filled from an ice house platform and pulleys, which connect with the rear of the building.

The equipment of these four rooms cost about $2000, the insulated cold storage and bunker rooms at $800 being the most expensive item. A 12-horse power upright tubular boiler with 15 pounds steam pressure, at $200, with all expenses of delivering, setting up, steam and return connections, brings the machinery equipment to $4755.

Small utensils considered necessary make a list of 152 items and 920 separate articles counting dozens and different sizes, costing $1137, a total of $5892. The complete inventory of such utensils in a college kitchen for 130 students numbers 169 items with 622 separate articles. Both include scrubbing brushes, brooms, pails, and various cleaning apparatus. A complete kitchen equipment adapted to 500 guests would cost not less than $10,000.

Organization required for 200 guests and 65 employees.

A. Kitchen organization.

EMPLOYEES.	WAGES BY MONTH.	
	Men.	Women.
Chef	$100	
First assistant cook	65	
Second assistant cook	50	
Pastry cook		$50
Pastry assistant		25
Pastry helper		18
Vegetable cook (also cereals, cocoa, salads)		35
Vegetable helper		25
Pot washer	30	
Dish washer, for machine	25	
One dish wiper		20
One dish wiper		14
General assistant	30	
Cleaner		30
Kitchen housekeeper		25
Total		$542

B. Dining room organization.

Head waitress	$35
Two tray boys	14–18 each
Twenty-five to thirty waitresses	14–18 each

Comparative Study of Institutions.

A blank of 70 questions was mailed to about 130 institutions of different types and sizes. Twenty-nine have been tabulated under the four groups of colleges, lunch rooms, hospitals and state institutions, and summer resorts. While much more data is desirable, some interesting results are indicated, only a few of which can be touched here.

Sizes of kitchens.—The smallest is only 16 by 20 feet, or 320 square feet where the cooking for 225 students is done. The largest is 50 by 55 feet, giving 2750 square feet for 450 guests, the average for all groups being 2273 square feet for cooking purposes alone. Adding the pastry, serving rooms, and all space given, they run from 1380 to 3936 square feet. All have live steam and machinery equipment averaging from one-half to two-thirds the amount found necessary

in hotel types. In colleges the numbers fed from one kitchen vary from 100 to 740. In some state institutions where over 2000 are fed, they are broken into several groups with separate kitchens and some have one large kitchen with a number of smaller dining rooms.

Cooks.—In one college two women and one man (baker) do the cooking for 240 students, but the average in all the colleges given is 1 cook to 67 students. In lunch rooms there is 1 to 84, in state hospitals 1 to 200, in summer hotels 1 to 40 guests. Counting all kitchen helpers, in colleges there is 1 to 25, lunch rooms 1 to 38. In state institutions, patients and inmates do the work without wages; in resorts there is 1 to 20 guests. Counting care of rooms and all employees, the colleges without student labor average 1 servant to 10 students but in the summer resorts there is 1 servant to 1½ guests. City hotels usually average one employee to each 2 or 2½ guests, to which must be added the care of grounds, livery, boats, golf, and various other summer expenses for resorts.

Wages of cooks.—College chefs receive from $21 a month for a woman to $85 for a man, the average being $54. Lunch rooms range from $35 to $52, the average being $45; state institutions from $50 to $93.75, average $67.25; resorts from $75 to $200, average $125.

Wages of waitresses.—These vary from $14 to $21 a month. In some places all receive a uniform price, in others there is promotion for length of service and efficiency.

Uniforms.—These are almost universal among men cooks and their laundry is done free by the institution. Most waitresses provide their own and are responsible for their laundry but in a few cases the washing is done free and they may either iron themselves or pay half price to have it done.

Interchange of labor.—Between departments this is only occasional. In colleges one waitress serves from 8 to 40 students, in resorts from 6 to 8. One large hotel has for years made a success in dividing its 75 waitresses into three groups, 25 doing all dining room and side work, 25 doing laundry work, and 25 chamber work, the latter positions being most sought as yielding tips and fees from two sets of guests.

Dining room equipment and cost.—In the private Club, mission oak furniture, tables with polished tops, chairs, side stands, and trays cost $810 for 200 people. China (English Maddocks) costs $710, silver $480, glass $250, and linen $830, including table cloths, napkins, felt pads, center pieces and stand covers. This gives a total of $3080 or $15.40 per guest. Where polished oak tables are used with doilies

only, no cloths, there is a difference of $1.50 per guest, or $300 investment.

The complete inventory of a well equipped college for 130 students gave $16.50 per capita. They use a more expensive silver and china (Greenwood) but have less expensive linen, changing twice a week instead of daily. The two equipments for the same number of people come to $2002 for the Club and $2145 for the college, the latter using soup tureens and silver ladles additional. These figures do not cover window shades, draperies, fire place fittings, plants, or ornaments. A fair average for table furnishings alone, of good grade, is $16 per capita.

Servants' dining room equipment.—In the Club this costs $4.75 each and $5.45 in the college.

Table linen.—The private Club, changing once daily, allows 3 cloths to a table and 4 napkins to a guest at $4.50 a dozen. With a maximum of 868 guests in August, the average is about 600 for 100 days, including the 4 club houses. The difference between fresh napkins every meal and one daily, under these conditions, has been translated into dollars as $2572.

Laundry charges for flat work are variously estimated from 50 cents per 100 for small napkins alone with seven to ten cents each for table cloths, to from $1.50 to $2 per 100 for both together. With summer use only and a good grade of linen, about ⅓ disappears each year. Some city hotels running all the year have standing orders for complete new equipment annually, but much depends on the per capita allowance and the kind of mangle work done. This machine is well named, but though ruinous to linen hotel men claim that it is cheaper to replace each year than to pay for hand work.

Seating capacity of dining rooms.—In very large rooms with long, narrow tables seating as high as 22 in institutions, 12 square feet per person will answer. In college dining halls, averaging 14 at table, 14 square feet is the average. One lunch room gives 16 square feet, but the resorts require 18 as a minimum. With round tables seating 4, 6, and 8, the smallest which can be used with comfort is 3 feet six inches in diameter, while 4 feet is much better, with 4 feet 6 inches for 6 persons and 5 feet diameter for 8. This is the largest number one waitress can serve well with a varied menu. Where dining space for 200 is divided into 4 separate rooms, with fire places, broken lines and many small tables, 20 square feet per capita is desirable but 18 will answer where tables are fitted to the spaces to the best advantage.

Raw food per capita cost.—In reckoning per capitas, figures are almost meaningless unless methods are known. The usual hotel rule is to divide the total food cost by the number of paying guests, regardless of the number of employees. Unless separate kitchens, cooks, and food accounts are kept, it is very difficult to separate them. In the private Club, those employed as chambermaids, livery, office, golf, etc., are charged to their own departments and only those directly engaged in food work are counted in food costs. Figures so far as given show college tables running from 6½ to 31 cents a day per student. Some state institutions are limited to from 6½ to 7½ cents a day for inmates but with a more liberal menu for physicians, nurses, and the general staff average 16 cents a day. One college giving very careful data spends 6.39 cents a meal for food, or 19.17 cents a day, and 6 cents for wages. A family boarding house averages 21 cents a day for food. The Club averages $1.02 with large August numbers, and $1.30 early and late with fewer guests.

Wages per capita.—These vary from 6 to 12 cents per day in colleges. Both food and wages are much lower in Canada than in the states. In the resorts, wages paid food employees in actual money are 30.3 cents per capita and including living expenses, which should always be reckoned, 56.4 cents. With smaller numbers 37 cents in money and 69 cents adding board and rooms is given.

Fixed charges per capita.—These, including rent, fuel, light, water, and supplies are 54 and 60 cents each at different seasons.

Waste.—This is noted as being specially heavy in kitchens and serving rooms, banquets and special dinners, trays sent to sick rooms, lunching of waitresses, surgical supplies in hospitals, in laundries, sewing rooms, and in the breakage and nicking of dishes. Inspection, supervision, and careful watchfulness control to a limited extent.

Best working units for efficiency.—There is no agreement as to the units of best size in feeding large numbers, or at what point it is best to introduce men cooks and steam with machinery equipment. Some prefer women as chefs with strong boys to lift. From 100 to 200 seems economically the worst point. Under 100 the heavy expense of steam equipment is hardly justified and not till over 200 will it pay over fixed charges. In pastry work women have a dainty touch which is seldom attained by men. Suggestions vary all the way from 50 to 400 as the best unit and this whole question invites careful study and investigation.

Scientific management.—As yet little has been done with shop

methods to increase efficiency in institutions or even in home housekeeping. An estimate of the difference in time between two methods of opening beds at night in the Club showed that 104 working days, of 8 hours each, were worse than wasted each season by the one which required that spreads be taken off and folded in creases at night, clothing folded over as in hospitals, and spread replaced in the morning, causing more wear and more frequent laundry; yet the difference was only one minute on each bed.

One strong impression made by this comparative study is the need of standards, not only in methods of keeping accounts that they may be intelligible, but in careful estimates of size, equipment, organization, buying of all kinds of supplies, and the many details and directions for work. Factories where this is done lead the world in successful results. In certain watches and automobiles any part of any machine can be replaced accurately in the shortest possible time. Things fit; there is no waste in adjusting parts. It is the secret of library efficiency today. While some things may vary with local conditions, there is no question that standardizing is the largest factor towards efficiency in all so-called scientific management. In the individual home the few minutes additional time required to do things by one method rather than another is scarcely noticed, yet the sum of all these moments counts.

The startling figures revealed by fixed charges and the growing luxury and expense of hotel living make this study of large numbers imperative. If the inmates of the state hospital where 2200 are fed were cared for as in the summer resorts, it would cost the state $1,312,905 annually for the food side alone, ($819,060 raw food, $60,225 service, $433,620 fixed charges).

Not only in plans, the best materials, the construction and the equipment of institutions is there great need of more definite information, but in lists of supplies, all kinds of systemized blanks, methods of accounting, graphic charts, duties and directions for employees, ratios, proportions, and menu making, is there a wide field for investigation and original research.

Discussion of Mrs. Dewey's paper:

The human machine has not received the attention it should. It is difficult to measure the efficiency or inefficiency of per capita-costs in institutions since it depends on whether they are places of punish-

ment or places to reform and to improve the inmates. They must be translated into terms of flesh and blood, or character. We need a measure for human efficiency, as horse-power in machinery; what Mrs. Richards, in an address to students, emphazised: "Wanted: a unit of man power."

Efficiency in the administration of institution kitchens depends largely on the machinery equipment, while the expense is so enormous as to be prohibitive in many cases. The thorough equipment of the kitchen for 200 with steam fittings and power, together with small utensils needed for a moderate menu such as the Club offers, would require not less than $6000. The contract price for a hospital kitchen equipment for 400, calling for the best modern labor-saving devices, steel tables, plate glass, and the best fittings was recently quoted as $20,000.

The point at which it pays to introduce live steam, machinery, and men cooks, is yet to be proved. Under 100 it seems impracticable. With 200 the fixed charges are very heavy, while with 500 or more the individual touch or home flavor of cooking is hopelessly lost except for *a la carte*, cooked to order specialties.

THE LUNCHROOM IN BUSINESS.

GERTRUDE SANBORN.

Nasmith Company, Toronto, Canada.

The topic which I have taken is the lunch room in business and I will discuss it from the standpoint of experience, particularly that gained in managing such an enterprise for a large baking firm in Toronto. This is a product of city conditions, since it is only when a town has grown beyond the limits within which business people can go home for lunch, that it needs down-town lunch rooms.

The city lunch room is a place in the business district which serves a simple meal for business men and women who have not too much time or cash to spend on it; yet who want quick service and good, plain food at a reasonable price in a clean, well-ventilated place. The lunch room may or may not serve breakfast or supper, but the lunch or noon meal is its chief business. It is in quite a different class from the tea room, the scale of prices being much lower, and there is little competition between them, although there is more or less interchange of customers.

There is a large group of lunch rooms which are not subject to ordinary business conditions or are so to only a limited extent, such as the Y. W. C. A. and Y. M. C. A. lunch rooms, which especially in the West and South are doing a very good work. They are expected to pay their own expenses at least, and in many cases do make enough profit to contribute to the support of other departments, but in case they fail to make expenses they may be carried along for the sake of the good they do. In quite another class is the lunch room which is entirely self supporting on the same basis as any other business, as a machine shop or candy factory, and which must pay its own expenses and provide some surplus for the future if it is to continue to exist. If the commercial lunch room is trying to serve the public in the best possible way, not with that as a purpose but as a business policy, it is always in close competition with lunch rooms of lower standard. Since the average customer cares more about a difference of five cents in the daily cost of his lunch than he does about ideals and theories, the lunch room which is not troubled with these has a certain superficial advantage.

The need in public eating places everywhere is for good, plain, home-like cooking such as people can enjoy who have to be careful about what they eat; nourishing soups, not too highly seasoned, fresh vegetables and fruits carefully prepared, a variety of salads, simple made-up dishes and desserts. The person who wants to make up a lunch without meat, not because of being vegetarian in theory, but for the sake of a balanced diet, or merely as a matter of taste, finds that there are few places to get it. Such simple home-like articles as scalloped fish, spinach and egg salad, meat and potato cakes, creamed eggs, do not belong to the usual chef's menu, but the public likes them if they are good. In the kitchen of the ordinary public lunch room there is not enough help to prepare things carefully, and the chef has not as high a standard as the housekeeper at home. Often he can do more expensive and elaborate things better, but he is not interested in doing as well as they can be done the plain, simple things for which there is need in the lunch room. The result is that low quality, cheaper materials and methods, and high seasoning are substituted for economy.

A short time ago I was in one of our kitchens where we had just started to train the women to use recipes. The cook who was making bread and butter pudding was greasing the individual moulds. I looked at the fat she was using and found it was only fit for soap grease.

When I told her that we would not use that, and asked her if she would think the grease was fit to use if she were making a pudding at home, she said that indeed she would not. It has been so long an accepted thing that in a public kitchen the proper thing to do is to pass off a poor thing for a good one whenever you can bluff the public into taking it, that it will take some time to correct this idea. It needs more conscience on the part of the people who do the cooking, more training for the management, and more discrimination on the part of the public as to what is genuinely good.

When competition is to be made on the ground of quality, there is need for every kind of economy, and economy means scientific management. Since every price on the lunch room menu is based on the cost of the order, the reckoning of costs in the food is of the greatest importance. The size and weight of the order needs to be regulated, and the cost reckoned again every time the market price of the material changes. Whenever it is possible to make up in individual orders it is a help toward uniformity in the cost and size of the order. The matter of recipes and formulas is an important one in the lunch room, for the reason that the public is more or less regular in its demands and expects any one item to be the same whenever it comes on the menu. If to-day macaroni and cheese has tomato in it and next week there is a new cook who makes it up plain, if the rice pudding to-day is made up with a custard and next time has raisins in it, a regular customer will stop ordering it because he does not know what he is going to get. If he is paying fifteen cents for a certain article he wants that very article every time. The average business man or woman reckons on paying fifteen, twenty, or thirty cents for a lunch and everything must be of good value and always alike. This accounts for the popularity of places which display their orders either on the cafeteria plan or on a counter system.

In reckoning costs, the intelligent co-operation of the people who do the cooking is required; and herein is the chief difference between the old style lunch room and the new. In the former, the kitchen is in the hands of a chef or head cook who makes the menu and orders, and plans what to do with the left-overs. He is chiefly responsible for the food costs and the other cooks look to him as head. The obvious disadvantage of this is that it gives a very important position to a person who is often unreliable, and leaves a very weak kitchen when he goes.

In the organization which I have found more satisfactory for most

lunch rooms, the food is in charge of a woman, either trained or experienced. She is head of the department if the lunch room is large enough to have separate departments, or in a small lunch room is manager as well. She plans the menus and orders, tells the cooks what to do, and teaches them when necessary; but the cooking is done by different cooks, each of whom is responsible for her own work to the food director. This organization is more expensive in help, but makes up by what it saves in material.

This plan makes the kitchen less weak when anyone stays out, makes it possible to use formulas and to keep costs uniform, and places the strength of organization in the system instead of in any one person. The workers nearly all have to be trained, beginning with teaching them how to measure with a cup and table spoon; and a good deal of the training will be wasted by their leaving. They have to be constantly looked after because they are likely to do foolish things without knowing it, as last week when a new girl was making cottage pudding. When the sample, baked on suspicion, came out it was quite flat and solid. It then appeared that she had used cream of tartar instead of baking powder; the responsible head had to be called on to reckon how to make up the other amounts in proportion to the cream of tartar, and finally brought it out right. The untrained cook is helpless in an emergency like this, because she does not know enough theory to correct a mistake, and has no experience to fall back on. She therefore has to rely entirely on her recipes and on the head of the department.

The recipes have to be made up in different quantities and if a quantity is required which is not on the formula, the head of the department must make it up. I have seldom found a cook who could multiply or divide a formula and keep it in proportion all through; and they do not want the responsibility of it.

The process of changing a kitchen which has been in charge of a chef to an organization of several women cooks using recipes, is a most interesting one, and for the time being, exciting. For a woman who has been working as cook's helper with no responsibility but to do what she was told, it is a great event to be allowed to make steamed fig pudding for a hundred people, and by simply following the recipe and directions have it come out just as good as if the chef made it. The women take an active pride and interest in their work when they are transformed from cook's helpers into cooks, which makes the experiment well worth trying.

The lunch room plan is so simple that it lends itself easily to any system of working out cost percentages, but I have found that most practical managers do not make as much use of figures as they could. Even in a small lunch room where there is regular book-keeping done, the facts are so few and so simple that the manager can get very helpful results by a little figuring, but unless she understands how to work out the cost percentages she will not be able to control them. When the question comes up: If the cost of an order of tomato soup is two cents what should be the price of the order?—the whole system of cost percentages is involved. It is hard for the inexperienced person to see that every five cents worth of food which is brought into the place must pay its share of the wage and rent and fuel; and that unless the cost is kept in the right proportion to price on every order, there is nothing that can make it come out right.

The three most important items of cost in the lunch room are food, wages, and general expense, and while these vary with different systems of serving and different sections of the country, it is possible in each case to arrive at a standard with which results can be compared. It might be supposed that any business would have some system of working out its costs, but I find many small lunch rooms which have none. I have in mind a tea room which had been open about six months when I was talking with the manager and asked her what kind of a cost system they had. She did not know what any of their costs were, and they let the bank do their book-keeping. Neither of the two managers had drawn any salary, but they had paid off a part of the money which they had borrowed to equip the place, and she thought they were doing well. I think they were too, but it was partly a matter of luck and if they had not done well they would not know why.

In most cases a full report of cost percentages can well be made at the end of every month or quarter. For a shorter period of time, if wages are paid weekly the wage percentage can be reckoned on the receipts of the week and this sub-divided into the departments of cleaning, serving, dining room, and kitchen to see where the variation comes from the weekly pay roll. If the percentages are reckoned only at the end of the month, it is too late then to have any effect on them, but if they are taken weekly, even when the figures are only approximate they can be better controlled. When there are several branches or departments in which conditions are similar, a subdivision of food material into its large items, such as meat, fish, butter,

eggs, or canned goods, can be made and a normal percentage found for each. In four branches of one business where we made a comparison, the averages for the meat item were 6, 7, 9, and 10; the higher average of the last two being accounted for by a higher average check of one cent. The average check runs so regularly the same that a variation of one cent in the daily average makes a considerable difference in costs.

In one lunch room where I took charge, the percentage of material was high, about ten per cent above the normal average which I had known in similar lunch rooms; the wage percentage was low; and the place was not paying its expenses. In the effort to economize, the wages had been reduced at the expense of quality in food and service, with the result that the place was run down. To correct this it was necessary to raise the wage percentage (but not the wages) above the normal in order to make the food and quality of service an attraction. When this was done the food percentage was reduced and the receipts of the place increased so that it paid expenses. The total of the wage and food percentages was then the same as when the food percentage was too high and the wage percentage too low, but the increased receipts made a reduction in the percentage of general expense (this item being comparatively a fixed amount) so that it left a small margin of profit. It is a common weakness of the woman who is a good practical manager that she uses up her energy in doing the day's work, and does not realize that only by taking time to find out the value of it and analyze the weak spots can she control the results.

In comparing different parts of the country where I have been in lunch room work (in Boston, San Antonio, Texas, and Toronto) there are some interesting points of difference. Compared with Boston, the conditions in San Antonio and Toronto are alike in that wages are lower, hours longer, and help inclined to slower speed. While in Boston the help is chiefly Irish, in Toronto the workers are either Scotch or English who have lately come over, often from gentlemen's service, and they are very easy to handle. The better positions are held by Canadians who may have come as waitresses and been promoted to other positions such as that of cashier or branch manager. The general tendency is to prefer easy hours and fair pay rather than the more strenuous life; they are on the whole more contented, have less push, and are less eager for chances to get ahead than in the United States. Waitresses often come into lunch room work from private family service by preference, although considering all

expenses it pays them much less. The comparatively easy schedule of hours, with social independence and freedom of time outside of stated hours, probably accounts for this. In Toronto, where the lunch rooms serve three meals in the day, serving breakfast at 7 and supper until 7:30, the hours are so arranged that they have every second afternoon off. This is worth a great deal from the standpoint of health and makes the work attractive.

In Toronto the influence of English cooking on the menu is very noticeable. Suet is much used in pastries; steamed fruit rolies, dumplings, and puddings made of suet, such dishes as deep fruit pies, marmalade roly, chicken and ham pie, steak and kidney pudding, are common on the menu. The Canadians like their cereal and custard puddings less rich than is the case in the United States; cream of tapioca and bread and butter pudding are made with less eggs and sugar. They take very large orders of porridge served in a soup plate, more tea and less coffee, more white bread and less wholewheat, and a great variety of buns, small pastries, and shortbreads. On the whole the diet includes more fats and less starches than for a similar group of people in New England. The relation between diet and temperament suggests that this may have something to do with the comparative lack of nervous prostration in Canada.

In reference to the question as to the place to be filled by trained women in the food business and manufactories, my experience has been to this effect, that women with training are without any question worth more than women who undertake the work without the knowledge thus gained.

Discussion of Miss Sanborn's paper:

In the discussion of Miss Sanborn's paper, which followed, Miss Arnold of Cornell University emphasized the need of trained intelligence in approaching the problem involved in feeding persons living on small incomes. In this connection, she made a brief report of a recent experiment at Cornell University in providing a balanced ration on a per capita expenditure of approximately eighteen to twenty cents per meal. The cafeteria system of service was used in this experiment and one of the most encouraging results was the interest shown by the students in the scientific side of the work. One man maintained a satisfactory degree of physical efficiency on an expenditure of from twelve to fifteen cents per meal. Miss Arnold indicated that a balanced ration at these prices is made possible only by using

meat substitutes, and that the largest problem to be met lies in finding sufficient variety in such substitutes. She added further that this experiment was conducted on a business basis and showed a satisfactory profit.

CONTROL OF INSECT PESTS IN INSTITUTIONS.

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Nature abhors a vacuum —be it neglected opportunity or even cessation from the "eternal vigilance" necessary to liberty, which in this instance stands for comparative freedom from insect pests. This is not mere pleasantry, it represents one of the fundamentals in the control of insects. The unused open well may be a mosquito breeder, yet water drawn daily therefrom in a bucket may render it innocuous so far as the production of these pests is concerned. The deserted city home may be a midsummer paradise for fleas; occupied, there is little opportunity for the pests to multiply. The rug in a living room may be exempt from injury, while the carpet in the parlor, opened only Sundays and on family feast or mourning days, may be ravaged by both clothes moths and carpet beetles. Numerous cracks and crevices or their absence in a dwelling are important factors in determining the prevalence of such pests as cockroaches, croton bugs, slides or silver fish, and even that small, brown, flattened, malodorous creature occasionally found in sleeping apartments. The point we would emphasize is that apparently insignificant factors are in reality vital, if insects are to be controlled. It frequently occurs that comparatively inexpensive modifications in methods may exert a marked influence on the development of insects.

We can hardly do better than to adopt a rough classification for the insects to be discussed and treat them under three heads; namely, fabric pests, food pests, and disease carriers, especially as measures adapted to the control of one species are frequently valuable in checking the depredations of associated forms.

The fabric pests in this country are represented by three clothes moths, known as the case-making clothes moth, the webbing or southern clothes moth, and the tapestry moth. The first named is the more common in New York State, and may be easily recognized in its destructive stage by the cylindrical case dragged around by the

small caterpillars as they move from place to place. The southern clothes moth differs from the preceding in that the caterpillar does not construct a case but lines its runways with fine silk. It is the more abundant and injurious pest in the latitude of Washington and feeds on a variety of animal substances, such as woolens, hair, feathers, and fur. The tapestry moth is rare in this country, considerably larger than either of the preceding, and displays a marked preference for heavier fabrics, such as carpets and horse blankets.

The carpet beetles are represented by two species—the Buffalo carpet beetle and the black carpet beetle. The destructive grubs of these two pests are readily distinguished, since that of the Buffalo carpet beetle is short, stout, and shaggy-haired, while the grub of the black carpet beetle is slender, round, and tapering to a tail of long hairs. The beetles are equally distinct. The Buffalo carpet beetle is stout, oval, less than one-eighth of an inch long and with black and white or yellowish white and red mottled wing covers, the red markings forming an irregular line with three lateral projections on each side down the middle of the back. The black carpet beetle is more slender, about three-sixteenths of an inch long, and of a uniform black or brownish color. Both of these beetles may be found about houses in late winter or early spring and are frequently brought into dwellings on flowers the latter part of May or early in June

The destructive young of the clothes moths, and the carpet beetles as well, thrive best in undisturbed situations or, to be specific, in garments which are allowed to hang for weeks unmolested, in carpets rarely swept, or in other fabrics under similar conditions. The substitution of the frequently removed and easily cleaned rugs for carpets, is an important step in preventing injury. Carpets laid on tight floors are much less liable to injury than where numerous cracks afford secure retreats in time of danger. Tarred paper under a carpet has been frequently advised as a preventive and is certainly a serious barrier to the insects taking advantage of cracks and crevices in the floor.

It follows from the above that all clothes presses should be thoroughly cleaned from time to time, especially where these pests are known to be abundant. The garments should be removed, aired, thoroughly brushed, and care taken to destroy any larvae which may not have been dislodged by this treatment. It is a very poor plan to have in the attic or some unused part of the house, miscellaneous woolens or other materials in which these pests can breed unrestricted, as such places

are likely to serve as centers for the infestation of more valuable articles. Spraying with benzine or naphtha two or three times during warm weather is recommended for the purpose of preventing injury to cloth-covered furniture, cloth-lined carriages, and similar articles in storage or unused for extended periods. Valuable furs, etc., are frequently deposited with storage companies, some of which make a practice of keeping the temperature at about 40° Fahrenheit. This is sufficiently low so that insects, even if present, will remain dormant and therefore harmless. Woolens and furs may be stored in tight pasteboard boxes with the covers sealed firmly with strips of gummed paper. This is thoroughly effective, provided the articles are free from the pests before being placed in such a box and the sealing is absolutely tight. Recent experiments have shown that insects of this class can not endure, for any length of time, a temperature above 120° Fahrenheit. This might be taken advantage of in some cases to free fabrics from infestation prior to storage. It would not be necessary to maintain the above named temperature for more than twenty minutes, provided that this was the minimum.

The silver fish, bristle tail, or fish moth, sometimes known as the slide, thrives best in places where there is comparatively little disturbance, and is therefore rarely numerous in dwellings having few crevices and no store room where articles are allowed to remain undisturbed for months or even years at a time. Ordinarily dusting the haunts of this insect with fresh pyrethrum powder, followed by thorough cleaning, is sufficient to prevent material injury. It is stated that this pest can be controlled by slipping into its haunts pieces of paper liberally treated with a thick, boiled, starchy, preferably nitrogenous paste poisoned with arsenic. Extreme care should characterize the employment of such poisons about the house.

The next group of insects comprises a number of diverse forms, noteworthy largely on account of their depredations upon various food products. Ants of various species may be ranked as the most persistent and annoying under certain conditions at least. The little red ant, only about one-sixteenth of an inch long, is particularly troublesome, since its small size enables it to enter almost any receptacle not hermetically sealed. This little pest is also very prolific and occasionally literally overruns buildings to the serious discomfort of the inhabitants. The small, black ant may also be abundant in houses and occasionally the large, black ant or carpenter ant is exceed-

ingly numerous. This latter insect establishes itself in the timbers and has been known to cause serious injury to the dwelling itself.

The ants all live in colonies and the most obvious method of checking the trouble is to search for their nests and destroy the insects. This can be accomplished only by ascertaining the origin of the pests and is frequently impossible. It is certainly good policy to destroy ant nests in the vicinity of the house and in the lawn. This can be done in several ways. The insects may be destroyed at once by the use of carbon bisulfid. Make a hole several inches deep with a broom handle and put therein about one ounce of carbon bisulfid and cover quickly with a little dirt. In the case of a large nest several holes should be made a foot or a foot and a half apart and each charged with the insecticide. Another method is to scoop out a portion of the soil and fill the cavity with a solution of cyanide of potassium, one ounce to a gallon of water. This soaks into the soil, liberates deadly fumes and destroys the insects. Another probably equally effective method is the sprinkling of the surface of the nest with fine particles of potassium cyanide. This material, it should be remembered, is a most dangerous poison and every precaution should be taken to avoid disastrous results.

Ants may also be destroyed by the use of a very weak solution of arsenic and syrup. This has been tried on the Pacific coast with very satisfactory results. A poisoning syrup consisting of sugar or other cheap sweetening and containing between 0.25 and 0.125 per cent of sodium arsenite may be used. This deadly bait might well be prepared by a druggist. The most convenient way of using the poison is to saturate pieces of sponge with the syrup and place them in a large jar with a perforated cover. Ordinary pint fruit jars having the covers perforated with nail holes are perhaps as convenient as any receptacle. The baited jars should be placed in the vicinity of the nests and so located that they will not be filled with water and at the same time be easy of access to the ants. The insects will take the poison readily, carry it to the nests, and the colony eventually be exterminated through the destruction of the young. A jar prepared as directed above should be serviceable for three weeks, and some half dozen ought to suffice for an ordinary house and lot.

Fumigation may also be resorted to. This will be discussed later, as it is of value in controlling a number of household pests.

The urban dweller finds cockroaches and croton bugs among the most persistent of the food pests. This is also very apt to be true

of hotels and institutions remote from the city, because the large quantities of food stuffs handled materially increase the chances of one or both of these pests being introduced. These disgusting insects feed upon a variety of vegetable and animal matter, and on account of their partiality for water pipes and their vicinity they have frequently been termed water bugs. It is impossible to keep a building moderately free from these pests if the insects are allowed to multiply unchecked in adjoining structures. This is most emphatically true of flats under different managements in the same building, and applies with equal force to any attempts to keep the insects in subjection in one portion of the building, when in another part there may be abundant food and attractive quarters. The first step in a successful campaign against these unsavory pests should be to eliminate, so far as possible, the available food supply and to reduce to a minimum shelters such as cracks and crevices. Badly infested dwellings or portions of dwellings, if moderately tight, might well be thoroughly fumigated at the outset and this supplemented by the persistent use of some roach poison, preferably one not dangerous to domestic animals or man. The Australians have found a dry mixture of one part of plaster paris and three or four parts of flour placed near accessible moisture a most effective method of destroying these insects, though the humanity of the procedure may be open to question. Recent experiments by the writer have shown that these insects, though usually found in warm places, can not survive a temperature of 120° if maintained for some twenty to thirty minutes. Under certain conditions this may be a most effective method of clearing portions of a building of these pests.

The larder beetle, a rather stout, dark-brown insect with the base of the wing covers mostly yellowish, is $\frac{5}{16}$ inches long and may be rather common about houses in May and June. This species breeds by preference on animal matter, such as ham, bacon, various meats, etc. The proper care of these materials, including the adequate protection of those suitable for food, is the most satisfactory method of controlling this species.

Stored cheeses are sometimes affected by the cheese skippers, white, cylindrical maggots easily recognized by their peculiar, jumping powers. Cheese and ham, both liable to injury, should be stored in dark places, and the small, black flies excluded by the use of a fine mesh, twenty-four-to-the-inch being satisfactory.

There are a number of other pests of minor importance, such as the

bean and pea weevils with their close restriction to the developing or ripening beans and peas. The occurrence of either of these weevils in numbers usually means a nearby infestation, frequently a bag of beans or peas lying unnoticed upon some high shelf. The legion of cereal products is subject to attack by a variety of insects, such as the saw-toothed grain beetle, the two flour beetles, and two flour moths. The saw-toothed grain beetle, only about one-tenth of an inch long and easily recognized by its reddish brown, flattened shape, and serrate margins of the thorax, is perhaps the most common of these pests, though the somewhat larger and stouter flour beetles are frequently found. All of these insects develop from eggs, which latter may be deposited in the food itself or in some nearby crevice. Broken packages are very liable to infestation, especially if kept for any length of time in mills, stores, or store rooms where laxity prevails and these little pests are allowed to become abundant. Prevention of injury must depend in large measure upon rigid cleanliness, especially the exercise of care to prevent accumulation of waste cereal products in nearby crevices or corners. Products stored in bulk and infested should be fumigated, preferably with carbon bisulfid, using this at the rate of about 5 lbs. to 1,000 cubic feet of space.

The last group, the disease carriers, is by far the most important, though the insects included in this class attract notice largely for some other reason than the part they may play in the dissemination of disease. We will proceed to discuss several species, making no attempt to indicate the relative importance of the various forms.

The most disagreeable in this group and the one usually avoided in polite conversation is the ordinary bedbug. It requires no description and fortunate is the individual who has not had at least a limited personal experience with the pest. It may not be so generally known that an allied species occurs in swallows' nests and occasionally invades adjacent living rooms to the consternation of the housewife. Bedbugs are nocturnal in habit. The oval, white eggs are deposited in cracks, the yellowish white, nearly transparent young hatching therefrom in a week or ten days. About eleven weeks are required to attain maturity, though the duration of this period is probably greatly modified by temperature and the food available. It is perhaps unnecessary to add that cracks and crevices, loose wall paper, and the old wooden bedsteads afford ideal hiding places for this disgusting pest. The modern, tight construction of both floors and walls and the use of iron or brass bedsteads reduce the shelters for this species to

a minimum and greatly facilitate its control. Extreme vigilance is necessary if one would obtain the upper hand in old buildings. Cracks and crevices should be stopped so far as possible and the joints of the old-fashioned bedstead treated liberally with benzine, kerosene, similar oils, or even hot water. Corrosive sublimate may be employed but it should be used with great caution, since it is a deadly poison. Fumigation with sulfur, using two pounds to each 1000 cubic feet of space and continuing the treatment for twenty-four hours if possible, is advised where the infestation is general. Similar treatment with hydrocyanic acid gas is probably more efficient. Modern institutions, though very liable to infestation, should be able to keep this pest under control by an intelligent application of the principles outlined above.

We would for just a moment call attention to the fact that a severe dermatitis may follow sleeping upon a new straw mattress, provided the straw has been infested by an insect such as the joint worm. There have been a number of such cases. The trouble is due to a predaceous mite which normally preys upon the insects in the affected straw, but under certain conditions may turn its attention to man. The eruptions may vary in size from that of a split pea to that of a penny and are round, oval, or irregular in shape. They may occur on various parts of the body and are accompanied by more or less itching. The obvious remedy is to avoid sleeping on mattresses containing new straw.

Fleas occasionally become abundant in a dwelling. The offending species is usually the cat or dog flea. This insect deposits its very minute, white eggs in the vicinity of the sleeping places of its hosts. The slender, active larvae feed upon organic matter in cracks and crevices, and may become abundant in dusty cellars or rooms undisturbed for several weeks, as for example, when a house is closed for the summer vacation. Fumigation with hydrocyanic acid gas, if thorough, will destroy the pests. A much simpler method is to sprinkle the floor of an averaged sized room with about 5 lbs. of flake napthalene and keep the apartment closed for twenty-four hours. The acrid fumes destroy the fleas without injury to the contents of the room.

Mosquitoes deserve a word, though under ordinary conditions there should be practically none in institutions. It is well known that these insects must have standing water in the near vicinity or they can not become abundant. The only exceptions are several salt marsh species which may be carried perhaps forty miles by gentle breezes. The occurrence of any number of mosquitoes in an institu-

tion should lead to the careful examination of the premises for uncovered rain barrels, open shallow wells, defective eaves-troughs, nearby dumps with pails, tins, and old cans holding water, or temporary excavations in which water might stand for a week or more. One can hardly think that an institution of any size would be located so near a swamp or swampy area as to be materially affected by mosquitoes breeding in such locations. The obvious remedy is to ascertain the breeding places and either eliminate them or prevent the access of insects by the use of fine screens or tight covers. It may occasionally be necessary to resort to judicious drainage or the systematic application of oil during the summer months. Mosquitoes occurring in a building during the winter are very likely to be malarial mosquitoes. These forms display a marked preference for grassy pools or recent excavations, and an attempt to eliminate their breeding places should be governed by this fact. The few usually wintering in a house may be readily destroyed by hand. It might be well to mention that the presence of malarial mosquitoes and Italians is very apt to result in an outbreak of malaria, since the residents of southern Italy frequently have latent germs of this disease in their systems. It is then comparatively simple for mosquitoes to transfer the infection from the immune Italian to the susceptible American.

Light brown flies, only about one-eighth of an inch long, may be occasionally found about houses. These are the common fruit flies or pomace flies, so named because of their breeding by millions in apple pomace. The occurrence of these insects in a building usually indicates the presence of accessible overripe or canned fruits. These flies are easily destroyed with fresh pyrethrum powder.

The most important insect in homes and in institutions is with very little question the common house-fly, sometimes known as the typhoid fly. It is extremely annoying and also carries, under certain conditions, germs of typhoid fever and may, in the same manner, disseminate other diseases of the digestive system, including cholera and certain other serious infections. It is hardly necessary to present a bill of particulars at the present time. We are concerned principally in methods of controlling the fly. Here the institution has an obvious advantage over the private home, in that it usually has control of a somewhat extensive area. Flies, like other insects, must have material in which to breed or they can not become abundant. Experience has shown that ordinarily flies do not travel a great distance and, in most instances, probably breed within 300 to 500 feet of the places where

they are extremely numerous. Fly larvae are usually most abundant in horse manure, though they may occur to a limited extent in cow manure, and have been found in miscellaneous collections of filth, especially decaying vegetable matter. The flies deposit their eggs upon such materials, the maggots hatch in less than twenty-four hours, and, under favorable conditions, complete their growth in five to seven days. They remain in a resting or pupal stage for about an equal period, at the end of which the parent fly emerges. The life cycle or round of life is therefore completed in from ten to fourteen days. This insect multiplies most readily in moist organic matter, preferably in light places. One of the most fly-beridden situations we have chanced across in recent years was an open barn cellar containing a mass of sloppy manure in a hog pen. Such conditions should never be allowed to exist. Manure can and should be stored in a fly-proof receptacle. This may be a tightly covered pit outside the stable or a cellar so dark or so tight that flies will not or cannot enter. Both are relatively easy to construct with our modern concrete walls, matched lumber and cheap building paper. Even should eggs be deposited in the manure prior to its being placed in any such receptacle, it would be comparatively easy to provide at the farther end of a cellar or vault, a small, tightly screened window which would serve as a fly trap. Any flies issuing would collect at such a window and comparatively few escape to the stable. It is entirely practical to make similar provision for the care of other fly-breeding materials, such as table scraps, decaying fruit, etc.

It is not always feasible to adopt such measures. We know that it requires at least ten days before the fly can complete its life cycle, consequently the removal at approximately five day intervals of all manure and other fly-breeding material will prevent the local increase of this insect. This is entirely practical in many places and in accord with the best agricultural procedure. Manure spread upon a field dries out so rapidly that the insects are unable to complete their transformations. The persistence of flies in localities where this method prevails means that certain breeding places have been overlooked and, as a rule, the evil can be corrected without great expense. There is no reason why stables and barns should be located so near institutions or dwellings as to cause serious trouble on account of flies.

It will be found in practice that some flies are very apt to persist in a neighborhood even after the adoption of rigid precautions. They should be kept out of dwellings so far as possible by the use of

window and door screens supplemented by the employment of tanglefoot or other sticky fly paper, or better yet, a sweetened five to eight per cent solution of commercial formaldehyde, which may also be used at the rate of a tablespoonful to a cupful (one half pint) of equal parts of milk and water. In either case place the solution in a shallow saucer or plate, putting a piece of bread in the center to supply a convenient lighting and feeding place for the flies. These formaldehyde preparations should be renewed daily. They might well be used in stables and other places attractive to flies as well as in the house. Dr. C. F. Hodge of Worcester, Mass., has recommended the use of garbage pails with fly traps attached for the purpose of attracting flies and capturing them at the outset. This may be advisable under some conditions, though we believe that an understanding of fly requirements will make it practical to keep an institution and its surroundings so cleanly, from an entomological standpoint, as to most effectually discourage this persistent associate of man.

A word as to fumigation. The presence of resistant pests, such as bedbugs and fleas in a building with numerous cracks and crevices, may justify thorough fumigation with such a deadly poison as hydrocyanic acid gas. This treatment can hardly be effective unless the outer walls are at least moderately tight, and should be preceded by the careful sealing of all orifices likely to permit the escape of gas. The materials used, namely, sulfuric acid and cyanide of potassium are among our most deadly poisons, and the author has therefore been in the habit of advising the employment of a drug clerk or some equally well informed party to take charge of this work. We have published detailed directions for fumigation, and these are available for those specially interested.

At the outset we called attention to certain conditions which might result in the abundance of insects. We believe that architects and landscape gardeners should bear in mind the fact that apparently minor changes in the construction and arrangement of buildings may have a material influence upon the prevalence of insect pests. Hospitals are now being constructed according to rigid sanitary rules directed mainly against the existence of disease germs. Such construction, generally speaking, is equally well adapted to the prevention of troubles from insect pests. We hope to see the day when the architect and builder will plan and construct dwellings with practically no cracks or crevices for the shelter of insects and, furthermore, by means of tight walls and

close-fitting doors, isolate kitchens and storerooms from other parts of the structure. The ordinary type of construction allows many hollow walls with runways which enable rats, cockroaches, other insects, and vermin to distribute themselves freely throughout the building, and immensely decreases the efficiency of fumigation. A little attention to these details, accompanied by an equally satisfactory arrangement for the disposal of garbage, the location of outbuildings, barns, and the care of the wastes therefrom, will do much toward solving the control of insects in dwellings and institutions.

SOME GENERAL PRINCIPLES APPLICABLE TO THE PURCHASING AND HANDLING OF SUPPLIES FOR PUBLIC INSTITUTIONS.

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When a steward or purchasing agent of an institution can go personally into the market and select goods it is relatively unimportant that he have in hand closely drawn specifications for such goods. When, however, he must order through the mail, or by means of competitive bids, it becomes imperative that his description of the goods he desires be clear, full, and accurate. Since the supplies for most institutions must be ordered by the latter method it is important that the supplies be properly specified and described.

The most essential elements of a specification may be briefly described as follows: It should correspond to commercial practice, first as to grading, second, as to size and character of package. Commercial bodies, such as Mercantile Exchanges, Boards of Trade, Merchants' Associations, etc., have standardized grades. These grades are recognized in all trading circles wherever such associations deal and goods come on the market and are bought and sold under those descriptions. As illustration, the New York Mercantile Exchange has graded butter into the following classes: "creamery," "process," and "factory." Each of these classes is subdivided into "specials," "extras," "firsts," "seconds," and "thirds," with a full description of each class and grade. All butter in the New York market is bought and sold according to these classes and grades. It is highly important, therefore, for a buyer to fully understand these descriptive terms and to specify his butter accord-

ingly. The butter in each section of the country is graded according to the rulings of some association, and the buyer in that section should be acquainted with the local rulings.

Most of the goods used by institutions are thus graded, and the purchasing agent should be familiar with the terms used. Failure to acquaint himself with these commercial terms may result in loss. For instance, one of the western states specified that the flour for its institutions should be made from "hard wheat" but did not further specify whether it should be winter or spring wheat. It happens that hard wheat may be winter wheat in Kansas or spring wheat in the Northwest. The two wheats are not of equal value, and consequently a contractor bidding upon the spring hard wheat might be at a disadvantage if an opposing contractor bid upon the winter wheat. The Lunacy Commission in New York State contracts for eggs under the description of "first packed," to be delivered throughout a six months' period during the winter. This classification applies only to eggs packed ready for refrigeration and not to eggs that have been refrigerated. As a result, contractors could not be sure as to the grade of eggs on which they were to bid. The Charities Department of New York City at one time specified "special" butter. There is so little of this high grade of butter on the market that it would be practically impossible to fill a large contract for it. It is needless to say the department did not receive "special" butter, although it contracted for it.

Again it is highly important that the packages specified be of a commercial size. Unless care be taken to insure this, it may necessitate special packing in order to fill a contract, which means extra expense. Both the United States navy and army require special packages, but for them they pay an additional price. There is a surprising difference in the size of barrels used in packing various materials. This may be illustrated by the following commercial sizes of barrels: Wheat flour, 196 pounds; corn meal, 200 pounds; cornstarch, 260 pounds; rolled oats, 180 pounds; split peas, 210 pounds; salt, 280 pounds and 320 pounds; sal-soda, 300 pounds; washing soda, 280 pounds; etc. Specifications should designate these net weights so that no contractor would be required to do any repacking in order to comply with the terms of his contract.

Again the terms used in the specifications should be clear and concise so as to permit of no double or doubtful meaning. The

specifications of the Lunacy Commission in New York State formerly provided for "extra" butter, grading certain points according to the grading of the Mercantile Exchange of New York City. The Exchange does not use points in grading, so the terms of the specification were confusing.

If the lowest market prices are to be obtained through competition by honest merchants, it is of primary importance that the specifications be in the language of the trade and in words so clear that they will not admit of a double interpretation.

Again the specifications should conform to the kind of test which is to be used in passing upon deliveries. It is of little use to specify flour in terms of "gluten," "ash," "color," "absorption," "fermentation period," "loaves per barrel," etc., unless the deliveries are to be tested to determine the amount of these elements. Little would be gained by stipulating chocolate in terms of "ash," "theobromin," "caffein," "starch," "fat," etc., unless there were subsequently an attempt to find out whether the deliveries actually contained the specified elements and quantities. Though there are objections to naming trade brands, yet it is advisable to do so if the institution buying is not prepared to make practical or chemical tests. Personally, I believe it advisable for each state to provide for testing chemically all of its supplies which can be readily tested by that means. In such a laboratory, also, expert judgment could be expressed on various products that can not advantageously be tested chemically, such as cereals, tea, coffee, dried fruits, etc. Until such provision is made by a state, it will be necessary for each institution to draw its specifications in terms that will readily lend themselves to practical tests by the steward.

The terms of the contract are important. Provision should be made not only for a rejection of the foods in case of false delivery with the privilege of buying in the open market pending an adjustment, but also for an annulment of the contract in case of repeated and persistent false deliveries. The New York State institutions provided for a rejection of defective foods, but did not provide for a cancelling of the contract in case of a continuance of such deliveries. As a result, they had a very annoying experience with a butter contractor.

It is inadvisable to contract by schedule rather than by items. By schedule is meant a list of articles grouped together and the total bid to be considered for the group. Such a grouping tempts a

contractor to bid low on articles the whole quantity of which are unlikely to be used, and high upon such as are likely to be taken in the full quantities specified.

Much consideration should be given also to the season of the year in which contracts for different supplies should be placed. If an institution has suitable storage place it is advantageous to contract for a year's supply of those goods which come upon the market but once a year, such as canned fruit and vegetables, dried peas and beans, dried fruits, cereals, rice, etc. It is advisable to contract for six months' supply of eggs in April and butter in June, use of which would begin in October. This is feasible either when an institution has cold storage space or can hire it. All supplies that come on the market periodically can be contracted for, month by month, more advantageously than by a long-term period. In New York State one department has contracted for flour in six months' periods beginning October and April, while another department has contracted each month. The short-term or open market buying has proved as economical as the long-term. At the same time it does not require the contractor to speculate upon the market, and reduces his temptation to deliver faulty goods in case the market goes up during his contract. Iowa contracts for butter on the basis of the market price of butter every Monday. The contractor indicates in his bid the amount above or below the market at which he will furnish the butter. As a result of this method, practically all the butter delivered is up to the specifications. In so far as it is practicable for institutions to buy in the open market, I believe it is advisable so to do.

When goods are bought upon samples, it is important that such samples be properly preserved. Many articles of food deteriorate if exposed to the air, such as tea, coffee, cereals, dried fruits. Such samples should be kept in air-tight glass cans. All samples should be kept in the storerooms to facilitate comparisons with incoming shipments.

The method of receiving goods should be well guarded. Care should be taken not only to count all articles after comparison has been made with the sample, but a certain proportion of original packages should be weighed. It is customary for institutions to assume that a 25-pound box of prunes contains 25 pounds, that a 60-pound tub of lard really has in it 60 pounds, that a 196-pound barrel of flour contains that full amount. That such an assumption

is not always well founded has been demonstrated by the Fiscal Supervisor in New York. He gave instructions to weigh all original packages. As a result, quite a proportion were found to contain less than the amount billed, and in the aggregate, for all the institutions, the saving thus secured was material. In case of faulty deliveries some institutions adopt the policy of deducting a certain amount from the bill. In the long run, I believe it is much more satisfactory to reject such a shipment and demand a new consignment which will meet the specifications. In many instances, it is to the advantage of a contractor to ship inferior goods though a deduction be made from his contract price. When this policy is adopted it may be found that a contractor will repeatedly send such defective goods.

Some institutions fail to take sufficient care in the storage of supplies. In many cases, this may be due to a lack of storage space. Except during the winter months cereals and dried fruits should be kept in cooling rooms to prevent the development of worms. Smoked meat should be kept in a temperature between 40° and 50°. A temperature suitable for fresh meat will seriously mold smoked meats. Brine barrels should never be kept in a room with fresh or smoked meats. It is desirable to provide a separate room for pickled meats. Owing to a failure on the part of some institutions to observe these generally recognized provisions, quite a large quantity of spoiled meat was discovered by a United States inspector in the institutions of New York and Indiana.

Deliveries from the storeroom should be guarded with great care. Two forms of requisitions are almost equally acceptable. One is a printed form on single sheets with blanks for the signature of the one making the requisition, the approving officer, and also the receiving officer. The other form is a plain blank-book, a copy of which is furnished to each department. In this is written the articles desired. The book then makes the rounds to the superintendent, storekeeper, back to the department for receipt, thence to the steward for record. Both of these forms are practicable. Whichever is used, however, care should be taken by the superintendent to so cross out the blank space on the requisition that no articles can be added subsequent to his approval. This precaution with regard to the last item can be exercised in several ways, by signing immediately below, by checking it, by drawing a mark

across the vacant space below it, or by numbering the lines and indicating the number of the last item at the time of approval.

It is highly desirable to require that no additional items shall be placed on the original requisition regardless of proper approval. Records can be made much clearer and more certain if new requisitions be made out for any articles omitted from the original order. Care also should be taken that the person receiving the supplies sign a receipt on which each article is checked and on which also is the date of receipt. These precautions are necesssary, not only to make a complete record which can be checked up by any inspector, but also for the purpose of making it difficult for any subordinate to take supplies. Even with these precautions, supplies can be taken, but it will require the coöperation of at least two, or possibly three, parties. If, however, the records are checked, one against another, even such a conspiracy can be detected.

In so far as possible, no supplies should be delivered in quantities larger than needed for immediate use. When this is not observed, it inevitably creates subsidiary storerooms, over which there is no accounting and from which supplies can be taken with little likelihood of detection. It is considerably more trouble to requisition for daily use and break original packages and weigh out the needed quantities, but economy will be secured only by this method. If the kitchen has on hand a barrel of sugar, or the cleaning force a barrel of soap powder, they are quite likely to use it with less care than though they had in hand just the necessary amount for the day. I am familiar with one hospital that cut down the cost per year of absorbent gauze and bandages from about $4,200 to $1,800, by changing the form of requisitioning and delivery.

It seems highly desirable to keep no records in the storeroom, but to transfer such work to the front office. This method is more expensive, since some store-keepers have spare time, which can be devoted to keeping books. When books are kept by the store-keeper, however, it is always possible to force a balance at the time of making an inventory, and such forced balances are not infrequent. The system which seems to me best is to have orders for supplies made out in the steward's office in triplicate. From one of these copies the amount ordered is omitted. This copy is transmitted to the store-keeper, who uses it as a memorandum on which he enters

the amount of supplies received on that particular order. The form of the memorandum enables him to identify the shipment. This memorandum is then sent by him to the steward's office, where it is checked with the order and the invoice. The invoice should not go to the store-keeper, nor should the store-keeper retain copies of the requisition. Thus, when he takes his inventory, he has no records with which to check it. This checking is to be done by the steward, and if pronounced "overs" or "shorts" appear, explanation is warranted on the part of the store-keeper. Inevitably, of course, some overs and shorts will be noted. It is impossible to weigh out a large bulk into many small portions and have the two weights exactly correspond. Then again, some supplies shrink while being held and others take on additional weight by absorption of moisture. The proportions of all of these factors, however, are familiar to the steward and superintendent and are given proper consideration.

The kinds and proportions of food to serve are large problems, on which there is not sufficient knowledge at the present time. It is easy, however, to determine the relative kinds and proportions actually being used in different institutions of the same class and being operated under about the same physical and climatic conditions. For instance, by comparing the amount of food furnished by the institutions in New York, Indiana, and Iowa, it was noted that wide differences in amounts existed. The state prison at Michigan City, Indiana, furnished per capita per day, 110 grams of protein, while a like institution at Fort Madison served 132 grams. The Institution for the Feeble-Minded at Fort Wayne, Indiana, furnished about 78 grams of protein per capita per day, while a similar institution at Glenwood, Iowa, used 106 grams. Like differences were noted not only as between States, but also within the States. The differences at once prompt the question whether some of the institutions are feeding too little or others too much or are possibly wasting an undue amount by careless handling. I do not here presume to pass judgment upon the question. The differences at least lead to this conclusion, that it is highly important for officers of every institution to make food comparisons with other institutions in an attempt to determine whether or not their own management is economical. Much information is available on relative food values, and with this data in hand, study should be made as to possible substitution of cheaper for dearer foods as the market varies.

Generally speaking, insufficient attention has been given to the problem of waste. Considerable study has been made of sewage and garbage disposal, but comparatively little systematic inquiry has been made into the means of reducing the amount of waste which is disposed of through these channels. The wide disparity in the amounts of food used in similar institutions led me to suggest an experiment in one of New York State's institutions to determine to what extent kitchen and dining-room waste could be regulated and reduced. This experiment has been in operation now for nearly one year at King's Park State Hospital. The results are very gratifying and instructive. This institution is one of the largest in the country, having about 3500 insane inmates. Their system may be briefly described as follows:

Every Saturday, the superintendent of each dining-room sends to the chef an actual count of the number dining in his respective dining-room. Not only is the total number given, but it is divided into classes as follows: Patients, patient workers, and employees. The amount to be issued, beginning the following Wednesday, is based upon this count. It does not need to be figured, but is taken from a basic dietary table which has been worked out by the steward. This table is made out for each dining-room. It indicates the amount that should be served to numbers increasing by the factor of ten or twenty, according to the size of the dining-room. For instance, the table for a room having approximately fifty would indicate the amount to be served to 50, 60, 70, 80, etc. A room serving 1000 would vary as follows: 1000, 1020, 1040, etc. The method of using the table is as follows: After each meal the uneaten food is separated into "usable" and "waste" food. The usable food is such as has not been served on the plates; the waste has been served. Each of these classes is subdivided into the kinds of food, such as bread, meat, potatoes, potato skins, cereals, vegetables, etc., according to the character of the meal. All of these are weighed separately in the kitchen and an accurate record kept. This record is before the chef when he makes his next issue, and a judgment as to how much should be issued is based upon the amount of waste of any particular article at previous meals. For instance, if there had been an undue waste in meat and the count for next week indicated 58 in the dining-room, he would issue on the basis of 50. If, however, it had been very small, and in his judgment too small, his issue would be on the basis of 60, the next higher

basic figure. Thus the basic figure next higher or next lower than the actual count is taken according to the amount of waste previously recorded.

I recently spent a day at the institution observing how the separating of waste was actually performed. I was surprised at the smoothness with which it worked. Each one or two tables is presided over by an attendant. This attendant, with the help of a patient, separates the waste into the required classifications. A large part of this work is done by patients. When this reaches the service room, the superintendent of the dining-room looks it all over and corrects any mistakes that have been made, after which it is weighed. Receptacles of uniform weight are provided for this purpose to reduce the labor of computation. The system not only works smoothly, but the employees undertake it without complaint.

The results of its operation have been pronounced. Its operation revealed the fact that the per capita amount of food served and eaten in the different dining-rooms varied widely. When this was discovered a redistribution was made, resulting in a much better feeding of the working patients and a reduction in the amount served to employees, which amount formerly had been wasted. Thus far there has been no attempt to cut down the total amount of food served. The excesses of one department have been transferred to other departments, where less waste was noted. It is highly probable, however, that after the system has been in operation longer the aggregate amounts of certain foods will be reduced. The waste indicates that such a reduction would be safe.

With such a system, carefully operated, thefts of food are easily detected. Under the looser system customarily in use, it is difficult to discover local minor pilfering. The system, in operation, requires no additional employees, and has in it marked possibilities.

Careful institutions determine scientifically the exact quantities of their coal, how much water is evaporated by each 100 pounds, the fluctuations of the steam pressure, the amount of ashes, etc. Why do they neglect to note with equal care the consumption of food by the inmates? It is much more important, and would result not only in marked saving, but also in an accurate knowledge of the acceptability of each article of food and its effect upon the inmates.

A system worked out with equal or greater care should be applied

to all supplies used by the institutions. The saving would amply repay for the labor expended.

My examination of the state institutions leads me to urge a much more careful system of records and a much closer determination of unit costs, both as to material and labor. Every state needs to do more than it is at present doing for its sick and dependent. Unless capital and operating costs can be reduced, expansion of the work will be exceedingly slow. If the taxpayers become convinced that their money is as carefully, yes, more carefully, expended than in private business, funds for enlargement of the work will be, I feel sure, readily granted.

Discussion following Professor Wright's paper:

Dr. Shanahan. Comparison between different institutions is difficult because of different organizations and methods. Craig Colony for Epileptics has a large number of small kitchens in cottages averaging twenty to forty patients and the waste is much greater than with one central kitchen.

Mr. Wright. This is a common belief. Service on the plates in a congregate kitchen is automatic, appetites are not the same, there is no attempt to gage this with large numbers while it can be done in small kitchens. We do not yet know in which there is the most waste.

Dr. Bernstein. We have principally the congregate plan at Rome State Custodial Asylum and care for 1200 people, 600 in one group, 400 in another, with over 200 employees and two farm plants. Things are eaten up cleaner in a small group and individuality is catered to. About 200 seems the best unit, one kitchen to prepare the bulk of the food and serve in six dining rooms for 1200 people, rather than to have six separate complete kitchens.

Mr. Dewey. What is the difference in cost between small and large dining rooms? If you have several thousand to feed, is it better to have one kitchen or divide into many? Opinions vary. What is the unit of greatest efficiency and economy in feeding people? Where is it better to divide?

Mr. Wright. This whole question of an economical unit has not yet been studied. How far can steam be carried economically from a central plant? It is impossible for any one institution to solve these problems. Waste is not yet studied. Take two dining rooms with the same careful steward and having about the same variety. In one the

bread is cut several hours ahead, in the other cut fresh, and there is great difference in the amount of waste in dried bread. The same with meats and other food which stands any length of time.

Professor Cole. The Massachusetts General Hospital inspects and regulates waste in garbage. The cans are all numbered and the contents are poured out in the presence of the housekeeper who makes a record of all substances in excess. The first year this was tried expenses were $5000 less than the previous year. The saving in silver recovered was also considerable.

Mrs. Moran. The New England Kitchen cut off a part of its work which was not yielding a return, with good results. There is a large wage waste in feeding 2000 a day. In one lunch room many rolls were left. The size was decreased seven ounces to a dozen and waste decreased. An extra piece of butter was served with potatoes but after the rule was made to serve only one unless asked for, the butter waste was decreased from 13 to 4 pounds. Laundry loss was traced to the fact that receiving clerk did not know just what she should receive back.

Food packages do not contain what they should. Some things shrink and should be allowed for.

Can we not get the State Charities Aid Department or the Sage Foundation to investigate some of these subjects?

It was voted that the Sage Foundation be asked to conduct an investigation on the most economical unit for administration of institutions.

A Member. An attempt was made to introduce into several institutions a certain grade of flour supposed to contain more nutriment to the loaf. In one, the patients would not eat it, in another they liked it very much. Millers themselves differ greatly in their estimates of quality of flour. One may judge by the amount of bread wasted.

Dr. Langworthy. There is very little difference in the chemistry and digestibility of flours. Some people like brown, some white flour. The color comes from coloring matter in the outer part of the grain. The miller finds by experience that white flour keeps better because it is the rejected part that spoils most easily. There is the same amount of nutriment in both kinds. In some flours there is more of wheat oil. A small drop of this oil is the most powerful laxative known. The difference is not due to coarseness of grinding. We are not in the dark in judging the quality of flour, as there are satisfactory tests. There is also a great mass of information in regard to

the deterioration of butter and flour that has been stored for any length of time. Animal and vegetable foods should be kept separate.

There are available reports of dietary studies at a number of institutions. At Bay View in Baltimore the patients are cared for very cheaply. Mrs. Abel is on the board of managers and has introduced as perfect a dietary as you can get for 7½ cents a day. There are many old people and instead of ordinary stew they have meat ground into the stew, and bread good enough for any table. Their success is due to applied expert knowledge. We need both empirical and laboratory knowledge. In every college the mass of material in government, state, and municipal documents, should be available and used in training courses.

The discussion which followed led to the following suggestions:—

That text books would be valuable for stewards' use. In baking bread the size of loaves is important. The commercial loaf is usually large, thick, and not sufficiently baked. A Home Economics loaf should be thin and crusty.

Concerning waste, Lake Mohonk can feed a pig for every 2½ guests and at the end of the season get $2500 for its pigs. There is a grease-rendering plant requiring one man, a one horse team, 2 steam kettles and a cauldron for cleaning garbage cans. This plant clears $1000 a year. Waste should be separated, tea and coffee grounds especially, and inspected. Glass in waste does not help pigs. A piggery was mentioned having a smooth concrete floor 80 feet square; waste was dumped on it and the floor kept clean and sanitary, and $5000 a year was cleared.

At the Hospital for the Insane at London, Ontario, the farms grow tons of small fruits and melons with most satisfactory results. The question was asked as to how many people are required to make it pay to put in a sewage disposal plant, but no answer was obtained.

At the Rutland Sanitarium, in Massachusetts, the waste is largely utilized. A neighboring hennery buys beef scraps at two or three cents a pound which are ground for the poultry. Grease is sold for $1.50 a day and as the pigs are profitable there is practically no real waste.

Printed forms for food supplies, used as a basis for bids, have worked very satisfactorily at Rutland, though contractors do not like them. For all except emergency orders which can not wait for bids, like drugs, they are desirable. The receiving end of an institution plant should be strong, as when manned by an expert butcher, or store keeper. All foods should be standardized on the bid basis. If goods are not

satisfactory they must go back at expense of the sender. If wrong three times, do no more business with that firm.

The Boston cut of beef, a five rib roast, is found most satisfactory. There is much difference of opinion in regard to the Boston and New York cuts of beef among institution workers.

The New England Kitchen finds that a loin of 65–75 lbs. gives best satisfaction. A 70 pound loin gives a larger number of steaks. With beef, as with flour, there must be a standard for institutions. With flour it is better to give the analysis required rather than to advertise the makers by specifying a grade. The variety of results with bread are due largely to methods of handling the flour. In one institution, when the bread was ready to be baked it was put on a truck and rolled a long distance to the oven; the loaves, flattening and settling, were largely spoiled.

A report was made by Miss Watson, MacDonald Institute, Guelph, Canada, on the work done by the Canadian Government in providing facilities for the testing of flour. A wheat and flour testing plant has been established at the Agricultural College, where milling and baking tests may be made. The problem is to secure the production of flour of even granulation and the determination of strength and quality of the wheat which is to be milled. By this testing machine, it may be determined whether the fault lies in the flour or in the process of manipulation. A knowledge of chemical differences in flour is given by which some of the problems of the bread making processes are solved.

Mr. Dewey pointed out the need for obtaining the accurate cost of the care of by-products in relation to waste. The making of soap, the raising of pigs, and the utilization of sewage as a fertilizer were discussed.

Miss Florence D. Corbett of Whittier Hall, New York City, explained the methods employed for returning unsatisfactory shipments to the dealer at his expense. If too many errors in billing et cetera are made on the part of the dealer, thereby necessitating an unusual amount of clerical labor to the institution, a charge against the dealer is made and he is notified that if such conditions continue he will not be asked to bid upon other orders. It was suggested that a valuable piece of work could be done by the Association in considering carefully points of law on contracts for the benefit of the inexperienced. It was pointed out that state institutions would be able to help in this matter as their regulations in the making of contracts and the relations of the institutions to the dealer are subject to legal advice and carefully worked out.

UNIFORM ACCOUNTING FOR INSTITUTIONS.

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I am supposed to be making a report as chairman of the committee on uniform accounting, but as a matter of fact I am rather making a personal report of progress toward the formation of such a committee and toward the preparation of a tentative plan of institutional accounting to be passed upon by it. Since my talk here a year ago I have been able to give to this subject only tag-ends of time, mostly after midnight when a good day's work had already been accomplished, and in the way of the formation of a committee I have been able to get only the assurance of the willingness of others to serve with me in the preparation of a final plan which we hope to have ready to present to you a year hence. I am very happy to announce that Dr. F. A. Washburn, Jr., superintendent of the Massachusetts General Hospital, which, as doubtless many of you know, is a very large establishment particularly well conducted, and Miss Olive Davis, superintendent of halls of residence at Wellesley College, will serve on this accounting committee.

In order that the committee may have something definite to work upon in the preparation of a final report for uniform accounting, I have attempted to carry my plan farther than I described to you a year ago. I think it will be worth while to outline the plan briefly in order that any discussion that it may stimulate may be helpful to the committee in its final work.

I have been impressed often, and for a long time, by the fact that comparatively few corporations or other business organizations make a statement of their financial operations in a form intelligible to persons not familiar with the details of their work, and therefore I have attempted to formulate for institutions a type of balance sheet and of income sheet which shall give a survey of the whole situation in a brief statement. The balance sheet should make it possible to compare the present situation with that of a year ago, and should make that comparison easy through the medium of parallel columns. If the figures for the last year are placed at the left of such a sheet, with a column for increase and one for decrease immediately following, and then the present figures are given at the right of the titles of accounts or groups of accounts, we have as the most conspicuous

figure on the sheet the present situation, but an easy correlation of the present figures with the old figures.

The assets should be divided into several groups. The property of the institution should comprise the first group, and should be shown in more or less detail, at least in enough detail to indicate the different types of investment, such as sites and grounds, buildings, furniture and fixtures, machinery and tools, etc.,—the classification being based on the varying considerations which would apply in judging one or the other of these groups. The second group should include investments, which, in the case of many institutions, would comprise the endowment. The sum of these two general groups, that is, properties and investments, would constitute the capital assets (unless there were certain cash funds destined, perhaps, because of restrictions, for capital use). The second main group of assets would be the so-called current assets, comprising any accounts receivable, supplies on hand, current cash, and accrued or prepaid items.

A similar division may well be made for the liabilities, so that the capital liabilities will be reported as capital stock, or proprietorship for charitable and other public institutions, special funds, bonds and mortgages payable, etc. The current liabilities are of the ordinary type, such as bills payable, accounts payable, and accrued items.

The statement which is of most importance in giving a summary view of the transactions of an institution for any particular period is the income sheet, which I should divide according to circumstances into several separate schedules. The best illustration that I can give of this is possibly that for a hospital. It is obvious that wherever there are several sources of income and several kinds of expenditures, it is desirable to show how far any of the kinds of income are adequate to take care of the expenses connected with them. In a hospital, for example, the first fact we wish to know is how far the income from patients is adequate to pay expenses. If we represent all items connected with the care of patients in a schedule by themselves, which we may call the revenue account, the resulting surplus or deficit gives us in final form the desired figure. This surplus or deficit may be carried down to the next schedule which we may call the endowment income account. This ought to show us how far the income from the endowment of the institution is adequate to make up for a deficit in its direct revenue or will add to its surplus.

There remain for most hospitals two other sources of income, the first of which comprises annual subscriptions from charitable organizations and individuals, and the second, legacies. It happens that subscriptions are likely to maintain a fairly steady level and may with some degree of certainty be counted upon by the admintrative officers to meet running expenses. Legacies, on the other hand, are extremely variable, and may run very high in seasons of an abnormal death rate among the well to do and very low even in extremely prosperous seasons which happen to be seasons of good health. For this reason it seems desirable to make a distinction between these two kinds of income, and therefore provide separate schedules for them. If we bring down the surplus or deficit from our second schedule into a third schedule, which we may call "normal current income," we have a final surplus or deficit resulting from what may be considered the normal transactions of the period under review. This figure in turn, when carried into the fourth schedule comprising legacies, will give us the final result for the year as affected not only by normal income and expense but by the transitory and unreliable matter of legacies. If any legacies have been received subject to the restrictions that they shall be used for capital purposes only, it is hardly feasible to consider them as of the same class with unrestricted legacies; but since most persons who are interested to watch contributions to an institution of this sort are not familiar with accounts and are therefore likely to expect to see even capital legacies placed with the income, it is desirable to place them in this part of the statement but designated separately. It might be well, therefore, to recognize that this fourth schedule is not strictly an income schedule nor yet a capital schedule, but combines all kinds of ultimate receipts, and distinguishes those for current use from those for capital use. On this schedule should be shown not only both sorts of legacies, but what portion of all legacies received has been set aside for capital use and what portion has been applied either to current running expenses or to the accumulation of a fund for future expenses.

To these schedules may be appended details for purposes of comparison—one institution with another or one year with another; but any one who has attempted to make comparisons for himself either within any institution or between institutions will recognize the importance of the summary statements even though details be not shown.

Before I explain to you any of the details of the processes by which I attempt to learn the costs of running the various departments of an institution, I am going to explain that the whole thing will sound very complicated, and to admit frankly that I expect you to look with a great deal of skepticism upon the desirability of doing so much accounting. It is very difficult for a person not familiar with bookkeeping processes to realize that a great deal of information may be recorded and correlated and preserved with very little labor—if only the bookkeeping system is adapted to this specific purpose. It is also true that many bookkeepers are not competent to devise systems which shall give a great mass of detail without an inordinate amount of time and manuscript. Possibly the best way I can indicate to you that not only is a great amount of detail possible but profitable is to tell you that at the Massachusetts General Hospital are kept only a little fewer than two hundred fifty separate accounts for foods consumed in the ordinary course of hospital work, and that somewhat more than two hundred fifty accounts are kept for the group of items called "medical and surgical supplies." I have never dared to suggest to persons interested in this kind of accounting more than fifty accounts for these two general groups together, because I know how easy it is to frighten anybody with masses of detail; but Dr. Washburn introduced a number of new accounts several years ago and found them so profitable that he proceeded to cut most of them up into many other subordinate accounts and so continued the process of cutting up, until today there is practically no item of consumption in either the food group or the supplies group which has not an account of its own. When I asked him how much of a clerical force is kept busy in recording these items, he remarked that one of the bookkeepers does it all in what otherwise might be odd moments, and that usually the figures for any month have been entered during the first half of the succeeding month without any crowding of the regular work.

Of course adequate accounts cannot be kept without adequate bookkkeeping, and no one should think for a moment that a proper system of accounting can be introduced in any sort of institution with the addition of a little untrained labor. The person in charge of the accounts must know not only what are the common labor-saving devices of bookkeeping, but also what fundamental accounting principles must be observed in drawing final conclusions from

the records. Yet it is possible to devise a plan which can be carried out by persons not particularly skilled in the handling of accounts and get results for various institutions that make possible a really valuable comparison between them.

We may now turn to the methods by which we hope to produce ultimate figures of cost. It may be well to begin at what is chronologically the wrong end, and suggest what figures we are aiming at and then look back and see how they may be attained. I have devised as my ultimate aim a statement which I call "final summary of institutional expenses." This shows not only the totals for various groups of expense, but the conversion of all those expenses into a cost per unit.

Since one of the best types of institution that I can use for purpose of illustration is a hospital, let me give you some imaginary figures for the types of expenditure to be met there. Most expenses should be shown for the unit of the patient-day, but a distinction should be made between ward patients and private-room patients because the conditions of service are so widely different that the expenses are much higher in one than in the other.

As I suggested to you last year, I am satisfied that it is absolutely essential for any adequate comparison of results that the figure of compensation for employees shall include not merely wages but everything else in the nature of compensation, such as board, lodging, and laundry. The amount of compensation per patient-day should appear on the final summary in all the groups of expense, such as administration, professional care of patients, living expenses, etc.; that is to say, we wish our administrative expenses to include all the expenses of administration, so that any cost of food, cooking, and service for the benefit of administrative employees shall not get into the cost of food, lodging and laundry for the patients. The same would be true for the group of expenses under the head of professional care of patients; so that in that group would be charged not only the wages of nurses, orderlies, etc., but their board, lodging, and laundry, and that when finally we come to our living expenses we shall have a figure which represents the living expenses of patients only. It is absurd that an institution having many servants and rather a scanty commissary should report as high a cost of food, of cooking, and of table service as an institution having few servants and a much better standard of living; and yet if we fail to distinguish between the board cost of employees and

the board cost of patients, a large number of servants would raise the apparent figure of living expenses without in the least raising that portion which is due to food consumption by patients. In this final summary, the living expenses are divided into four items, namely, food supplies, cooking and service, housing (including housekeeping), and laundry. When, therefore, we have added together the cost of administration, the cost of professional care of patients, and the cost of living expenses for patients only (all other living expenses being carried to the administrative group or the group of professional care of patients as indicated above), we have a final figure which is the cost per patient-day for the actual patients; and the details of food-cost, cost of cooking, cost of service, cost of heating, lighting, etc., are preserved along the line, so that we can make comparisons in groups or in details.

There are of course many items of expenses which are not useful statistically on the basis of the patient-day. For example, ambulance service is the same for a person brought to the hospital for a two-days' stay as for one brought for a three-months' stay. Not usually are many more laboratory tests or examinations made for a patient who stays a month than for one who stays a fortnight. These various special items of expense, therefore, should be converted into unit costs for units which are determined solely by the nature of the service rendered. The unit for ambulance service, for example, is trips, for the dispensary is number of treatments, for the home nursing department is the number of visits.

The result of all this is that we have a unit cost for all types of service rendered, divided not only on the basis of the kind of serice rendered but also on the type of patient for whom it is rendered. Any figures less distinct, less specialized than these, seem to me not to serve the purposes which animate us in a plan of uniform accounts, for unless we have final unit costs, it is impossible to make a comparison between institutions working under varying conditions, such as a hospital where the nursing is done mostly by nurses in training without wages and hospitals employing only graduate nurses, or schools utilizing the services of scholars and schools employing only paid laborers who board outside and schools using only employees boarding on the premises.

The obvious difficulty in the way of getting these final figures is to make distinctions, as we go along, between expenditure on account of employees and expenditure on account of the persons for whom the

institution is primarily maintained—as patients in a hospital, pupils in a school, guests in a hotel or club. In the first place, no supplies should be issued without a requisition upon the stores department, for otherwise there is no knowing what is their destination. These requisitions accomplish the purpose, without much labor, for everything except foods; but in this respect, since in any large establishment several tables are likely to be maintained and many foods are common to them all, great care is necessary to see that each table is charged for its actual consumption. Yet I feel that I ought to remind you that a thing which is very complicated to explain is sometimes, when once understood, very simple to carry out, and I could keep the records for possibly many days in less time than it would take to explain the process for a part of one day. If a proper count is taken of heads, so that the figures show how many persons are taking their meals in the establishment under the various groups, the unit for each type of table becomes the day or the meal. If we divide all foods into three classes, (1) those which are common to all tables—such as butter, sugar, flour, milk, etc.—(2) those which are common to all tables for any particular meal—such as squash, potato, sauce, dessert—and (3) those which are peculiar to some tables for some meals—such as squab for private-room patients in a hospital and boiled beef for the employees—we have a means of following the distribution: For the total cost of all foods in class 1 (figured in totals at the end of the month) may be distributed among all types of tables per capita; the total cost of all foods in group 2 must be figured for each meal but may then be distributed per capita, for being common to all tables for each meal it is chargeable against all equally; the cost of foods in group 3 must be figured for each meal, of course, and must be charged to the individual tables on the basis of the number of persons at those tables. To make these calculations and the distributions is not nearly so serious a task as at first sight appears; for obviously somebody must determine what is to be served at each table, how much raw material will be required to prepare that food, how many persons must be provided for, and must make a record of these facts for the use of the cooks. If this record is preserved, all the figures are at hand for the office to make a distribution of the food cost, and only a small amount of calculation, applying the purchase price to the goods consumed, is necessary to give the desired figures.

Since the time-books will show the number of employees in each

department, it is a simple matter to determine for each class of table the amount which should be charged to that department for the board of those employees. Similarly, the cost of lodging for the various employees should be distributed to the departments responsible for them. Indeed, a general distribution of all housing costs throughout the institution should be made at least annually. To do this does not require inordinate labor. When once the floor space and cubic space of the rooms occupied by the various departments and of the quarters used as lodgings by employees of the departments have been calculated, it is easy to determine what proportion of all the costs relating to housing should be charged to these departments. Certain items like cleaning should usually be distributed on the basis of floor space; heating, lighting, and building repairs should usually be distributed on the basis of cubic space; but in any particular case it is necessary to consider the circumstances of that institution before the space-cost distribution can be made satisfactorily. It would be unfair, for instance, to charge certain departments for light on the basis of cubic capacity if in those departments light is used only at rare intervals, or only for a desk situated in a corner. Practically all the house and property charges, including heating and lighting, insurance, taxes, rentals, care of grounds, etc., may be distributed on this space-cost plan; and when once the calculations have been made determining the percentage for each department, no further calculations need be made, except to apply the fixed percentage of the total cost, until some re-arrangement of housing has been made. The calculation of these figures, moreover, is not very laborious if only one takes advantage of such mechanical devices as the slide rule and computing machines.

One of the most difficult costs to distribute has proved to be that of laundry work. So far as I have been able to learn, no laundry anywhere knows the actual comparative cost of doing various kinds of laundering, but an investigation has been started and we hope soon it will enable us to determine for a large institution what ratio of the total cost should be applied in charging towels, napkins, table cloths, sheets, etc., to the various departments, and thus enable us to make a comparison of costs between various institutions for their various departments. It is easy enough, of course, to learn total laundry costs, but if these are properly distributable to the housekeeping department, the service or dining-room depart-

ment, and the various other departments, for the laundry work done for their employees, it is important that we shall have some basis of distribution better than the number of pieces.

It is obvious that if we charge to each department the board, lodging, and laundry of its employees, and credit the food departments, the housing account, and the laundry account for those sums, the amount remaining as a charge to the food departments, the housing account, and the laundry account is the amount directly chargeable to the service of those for whom the institution is primarily maintained—whether patients, guests, students, or what not. This, of course, is the ultimate figure which every one is seeking in order that comparison may be possible between different institutions; for the method which I have so far suggested allows for all differences of conditions not inherent in the situation itself.

The next elements which I have to suggest in the complete scheme are those about which there may be the widest difference of opinion. It is not customary in business to charge interest on equipment; but I am satisfied that many institutions are conducted at a loss, or at least with something less than the possible benefit, largely because there is no check in the accounting on extravagance by managers of departments. For illustration, I know of a hospital, whose trustees give the superintendent a very free hand, which has equipment of a very expensive sort far in excess of any probable need for some years to come. The superintendent takes pride in pointing out the beautiful facilities and has reason to do so; but so long as this equipment is lying idle or is doing work at a slightly greater convenience than might be done by less expensive equipment, either the funds of the hospital itself are lying idle when they might be earning interest, or else the institution is raising funds from the community that might more profitably be spent elsewhere. The only check which can usually be applied against extravagance of this sort is an understanding that whoever for any department orders equipment will find his costs at the end of the year increased by interest on that equipment. This interest should be credited not as an operating earning, but as income from property. It is true also, of course, that allowance for interest is necessary not only as a check on extravagance by managers of departments, but also to enable us to make any comparison between institutions as a whole; for if we make no such allowance, an institution with very elaborate equipment will have naturally lower direct operating costs in the

way of wages and miscellaneous expenses and will by so much appear to be better managed, when, as a matter of fact, it would probably exercise better economy to plod along with inferior equipment in spite of a slightly increased cost for labor and miscellaneous items.

Unless, again, depreciation on equipment is taken into account, there is danger that our comparisons not only between different years and different managers within an institution, but also between different institutions, will be extremely misleading. Every one knows that in hard times managers skimp on renewals and repairs and in flush times try to make up the deficiencies. This undoubtedly is good policy, but it does rob Peter to pay Paul, and it does throw out of usefulness all comparisons between one institution which happens to have a flush year and another which happens to have a lean year. I should go so far as to say that depreciation should be allowed on every class of equipment, and that the amount on the separate classes should be kept distinct unless it chances to be very small.

This means, of course, that something approaching an inventory must be taken at least annually. It is not necessary that every item should be listed and appraised, for often one can give a pretty accurate estimate of the percentage of value to cost in some room or department as a whole. In dormitories, for instance, it would be absurd to value each individual chair, but a glance at almost any room would suggest to a competent manager that 25 per cent of its cost, 50 per cent, or 75 per cent is a fair valuation. And when once an inventory has been taken on the basis of cost (or, better, if whenever articles are replaced they are listed as belonging to that department), an allowance for shrinkages can be made each year without undue labor. It should be recognized, of course, that depreciation in one article is offset by new value in another article in the same department, and that what we desire is never individual valuations but the valuation of equipment for any department as a whole.

The bookkeeping methods by which all this may be brought about may be worth summarizing. The various departments of an institution would be given general accounts in the general ledger, and for convenience in making memoranda, etc., each would have its symbol. These departmental accounts would be divided each into several special accounts, each of which would be represented in a subordinate ledger containing details for the various items of direct expense pertaining to them,—such, for example, as express,

stationery, postage, and miscellanies, under office expense. Each of these general accounts would have also certain subdivisions which would be used ordinarily only for transfer or closing entries at the end of each month, quarter, or year. In the ordinary course of bookkeeping the special expense accounts, such as have been enumerated for the office expense, would be debited from the cash book or the voucher register, and this plan would contemplate no change in the method except possibly the provision of a special expense ledger which would show in detail the items shown in the lump sum for the general ledger account. The various items which cannot be charged directly as payment is made, such as board, lodging, interest, depreciation, etc., would be charged to accounts representing the institution as a whole, or certain subdivisions of those accounts, and would be distributed at the end of any convenient period to the proper accounts representing departments.

This may be illustrated by the housekeeping department. In the ordinary course of business this department would be debited for wages, supplies, and express, but at intervals it must be debited in addition for the board of its employees, for their rooms, for their laundry, for interest on its equipment, and for depreciation. To the steward's department will have been charged not only the cost of all food purchased, but salaries, etc., and to the kitchen department will have been charged wages, supplies, fuel, etc., and also board, rooms, and laundry of its employees. When all the costs for the steward's department and for the kitchen department have been combined into a "transfer board account," a total may be distributed by a simple journal entry to the various departments concerned, and the housekeeping department in its turn will be charged with its share, to be added to the items already mentioned. This total debit to the housekeeping department is then transferred to the "transfer housing account." To this transfer housing account would be transferred also the cost of repairs of buildings, interest on investment in buildings, taxes, etc. The total is then distributed to the various departments having employees housed, or using quarters for their own transactions—such as operating rooms in a hospital. In the end, nothing remains in the transfer housing account but that which is properly chargeable to the persons for whom the institution is maintained, as already suggested. These transfer items appear to be more or less complicated and to

require a good deal of labor, but when the system has once been worked out and the method thoroughly understood, it is a simple matter to attain the final figures of cost as already outlined.

The result of all this is the possibility of learning accurate costs all along the line—total costs per capita day, costs per capita day for large groups of expense, costs per capita day for small detailed items of expense, and actual amounts of expense for both large and small divisions These, moreover, would be all put on the same plane, e. g., compensation would be *all* compensation, whether in wages, board, or what not, and so institutions under different conditions in such respects could be compared, and within an institution comparisons could be made of different methods. Only when this sort of thing is done can any valuable comparisons be made, for no two institutions are operated under the same conditions.

Discussion of Professor Cole's paper:

Mr. Cole's paper was discussed as follows:

The question as to the proper method of evaluating the produce of one department which is used by another department was raised, and Mr. Cole stated that, in his opinion, the department producing the product should be credited with the actual cost of production, and the department utilizing the product should be charged at the same rate. The concrete example used was that of the products raised on the farms of institutions and consumed by the inmates.

Mr. Dewey said that such products should be charged at their market value, the producing department having the benefit of any profit accruing.

The different methods used in reckoning per capita food costs were outlined by Mr. Dewey as follows:

(1) Dividing the total cost for workers and guests upon the basis of the number of guests.

(2) Dividing the food cost of certain groups of workers and guests upon the basis of the number of guests.

(3) Separating the food cost of the workers from that of the guests and getting the per capita cost per eater.

This difference in method of computation makes nearly all the available data useless for comparative purposes.

TENEMENT HOUSE SUPERVISION.

MISS EMILY WAYLAND DINWIDDIE.

Trinity Church Corporation, New York City.

There are not enough competent workers in any branch of tenement house supervision. The development of the improved housing movement is constantly creating new positions to be filled. One city after another is attacking its housing problems and calling for experts to help in investigations and plans. New model tenements are being built and the owners in some cases are having serious difficulty in finding supervisors.

A tenement owner said to me a short time ago that it was hard to secure a manager for her houses. I said: "Have you tried so and so?" She replied: "It is no use. Ever so many people want her, but she cannot take charge of more houses than she has already."

A citizens' committee interested in a housing campaign in a large city tried for two years to find an experienced investigator to study their local conditions. Their important campaign was delayed during this time because of the scarcity of trained workers, making it impossible for them to secure one to fit their needs.

There are positions for women as well as men. It is interesting to see the part the former are playing. Much of the work of the Octavia Hill Association in Philadelphia has been done by women directors and rent collectors. In New York Miss Ellen Collins and Miss L. T. Caldwell have been conspicuously successful in model management of houses. The City and Suburban Homes Company, the largest model tenement organization in New York City, employs women as both superintendents and rent collectors. Mr. Alfred T. White of Brooklyn has a woman in charge of each of his groups of model houses. Many of the best special housing investigations, such as those of Miss Mary B. Sayles in Jersey City and Miss Janet Kemp in Baltimore and Louisville, have been made by women. Not a few of the more permanent unofficial positions dealing with the general tenement house situation are held by women, such as Miss Madge D. Headley in New York and Miss Clark in Boston. In New York, in Chicago, in Philadelphia, and in other cities women have been appointed official municipal sanitary inspectors.

Tenement house supervision is a wide field, covering several different kinds of work. There are special investigations, both unofficial

and official, the former conducted on behalf of citizens' committees or other private organizations or private individuals, the latter carried on under the direction of municipal, state, or federal housing commissions appointed for a limited time. There are various forms of permanent supervision, either public or private, of the tenement conditions of any given locality, such as the work of the Tenement House Committee of the Charity Organization Society in New York, and of the New York City Tenement House Department. And there is the supervision and management of the individual tenement house or groups of tenements on behalf of the owners. This last in the United States is private enterprise only, since we have no municipal or other public ownership of tenement buildings.

The results already accomplished in all divisions of the work make an inspiring record of achievement.

In New York in the early days great improvements were brought about through the investigations of the New York Association for Improving the Condition of the Poor, the city inspectors, the council of hygiene, the Metropolitan Board of Health, the successive Tenement House Commissions, and individual pioneers in the field, such as Mr. Alfred T. White, and Mr. Jacob Riis. Existing conditions were brought before the public and steps were taken to remedy many of the worst of the evils.

Tenement houses may seem bad today, but if we compare present and past we find ground for encouragement. We no longer have the old fever centres. In 1842 Dr. John H. Griscom, then city inspector in New York, described one of these. The front building was partly used as a saloon and partly let to Irish families. A covered alleyway led to the rear house on the same lot, occupied by negroes. A number of pigsties and stables surrounded the yard. From the quantity of filth, liquid and otherwise, from these, the yard had become almost impassable. To remedy this it had been completely boarded over. The boards were partly decayed and by a little pressure even in dry weather a thick greenish fluid could be forced up through the crevices. In the rear building in the course of six weeks there occurred nine cases of typhus fever. By way of reforming the building it is recorded that later the number of pigs about it "was reduced to that allowed by law."

The filth of the houses, the primitive methods of disposal of waste, and the swarms of flies carrying disease germs from foul matter to food and drink offered favorable conditions for the development of

sickness. Six thousand people in the city died of cholera and related intestinal diseases in five months at the time of one epidemic.[1]

In the infamous Gotham Court, otherwise known as Single and Double Alley from the two alleys along the length of the building and containing the partly open sewers carrying off the drainage of the houses, Dr. Pulling said in 1864, that of the 504 inmates of the court at the time of his visit, 146 were suffering from diseases of various kinds, including 4 cases of smallpox, 8 of typhus fever, 7 of scarlet fever, 27 of infantile marasmus, 12 of consumption, 5 of dysentery, and a large number of cases of other intestinal diseases and of skin diseases. As to the infant mortality, he said: "Thirty per cent of those born here do not survive a twelvemonth."

It is something that advancing sanitary standards have wiped out such houses as these of the old days.

In recent times progress has been even more marked in many respects. In New York, for example, as an outgrowth of the work of the Tenement House Committee with Mr. Lawrence Veiller as secretary, there was appointed the State Tenement House Commission of 1900, which drafted the present tenement house law, and in 1902 there was created the present permanent municipal Tenement House Department, whose sole work it is to see that the tenement buildings in the city are built and maintained as required by law.

This means that the type of new tenements going up in New York City has been radically changed. The so-called "new-law" tenement has taken the place of the old "dumb-bell" type in Manhattan and the Bronx and the "railroad train" in the other boroughs.

Instead of the halls and 10 out of 14 rooms being dark and ill-ventilated on each floor below the top story, as was the case in the "dumb-bells," the halls and rooms in the new tenements all have light and air. In place of the old 28 inches wide air-shaft on which bedrooms opened, the inner court in the ordinary new building in Manhattan is now 12½ by 25 feet and in addition has a tunnel at the bottom extending out to the street or yard to give a current of fresh air.

Each family in a new tenement has its separate water supply and sanitary accommodations.

Fire escapes with inclined stairs, flat treads, and a hand rail have taken the place of the old vertical ladder type, down which officials in the Fire Department reported no woman or child had ever been known to escape. Halls are now fireproof and the cellars, a danger

[1] Report on Cholera in New York, Board of Health, 1849.

point for the starting of fires, are cut off from the floors above by fireproof ceilings and outside instead of inside stairs.

The improvements in these two points alone is an immense advance. In "new law" houses we have approximately a million people living in light rooms instead of the dark rooms which were being built immediately before the passage of the law and would presumably have continued to be built but for its enactment. This must inevitably influence the tuberculosis rate and the general vitality. In the matter of improved fire protection we can see results already. A fairly recent report of the Tenement House Department showed an average of between forty and fifty deaths a year from fire in the old tenements and not a single death in the new buildings, though these have been erected now for ten years and house a million people.

The Department under the law also required improvements in the old houses, including the lighting of dark rooms at least by large windows to adjoining rooms, the providing of fire-escapes for apartments where these are now lacking, the supplying of running water on every floor, and the replacing of antiquated arrangements for the disposal of waste by modern plumbing. And in both old and new houses some degree of cleanliness and repair is enforced by the municipal authorities.

Private effort, too, has brought excellent results. Miss Ellen Collins in New York and such organizations as the Octavia Hill Association in Philadelphia have taken some of the worst houses to be found, and have transformed them into sanitary and safe homes, still cheap enough to be within reach of the very poor. Model tenement building also has extended greatly and new types have been developed.

The accomplishments of the past show what can be done, and the conditions of today call for much more that needs still to be done. Our congestion problems have hardly been touched. We still permit dark rooms in new one- and two-family houses, as these do not come under the legal definition of tenement buildings. We have not yet found a method of effectually dealing with home manufacturing in the tenements. Model management of old houses in the city is greatly needed. There is abundant room for other landlords to take up work similar in the main to what Trinity Corporation is doing in making improvements in existing houses and attempting to keep them in the best possible condition, though the situation of Trinity is peculiar in that the majority of its dwelling houses, although in down-town New York, are not tenement buildings even according to the legal definition, but are private houses for one or two families, and with very few excep-

tions were not built by the Corporation, but by other owners holding ground leases, the houses coming into the possession of Trinity Church only on the expiration of the leases.

Other cities in some cases are only now waking to the fact that they have a housing and sanitation problem, though they may have miles of unsewered streets, an intolerable drainage situation, a recurrence of typhoid every year after the height of the fly season, and overcrowding, dirt, and tuberculosis everywhere in the poorer sections.

Housing evils are ages old. Tenement buildings to shelter a number of families under the same roof were constructed in ancient Rome as early as 455 B. C., and Augustus Caesar, on account of the unsafe skyscraper buildings of his day, was obliged to make a decree limiting the height of housees to 68 Roman feet, about that of our modern New York tenements.

The problem has existed for many years in the past and it will mean work for years to come before we are within sight of our ideal, the elimination of the slum and the making it possible for every man, woman, and child to live in a decent, safe, and healthful home. But there is hope for the future. The great progress already made and the fact that public sentiment is aroused to the need for further progress both augur well for what we may expect the next decades to bring. Many of our earlier housing evils have been wiped out. Typhus and not a few of the other filth diseases of the crowded centres of former times are now practically unknown. With the passing of the present tenements built under old laws in New York and in most other cities the fire-trap multiple dwelling, and the bedrooms without windows to the outside air, will be done away with—for all time, we hope. If the same energy be applied with the same success to our remaining problems, there is ground for hope that they too may be solved and the generations of city dwellers of the years to come be able to live under happier and healthier conditions than those of today have ever known.

GRAPHIC CHARTS.

MELVIL DEWEY.

An intelligent use of comparative graphs or curves with colors and broken lines gives any statistics in a form as much clearer than figures as a photograph is clearer than any description of a person or land-

scape. One who tries to think in figures is now hopelessly out of date. The curves or graphs with the rising or falling line, showing the tendency, conveys the information in the simplest and clearest way known to the human mind. The same details in a mass of figures convey little meaning except to one skilled in their use, just as a page of music indicates the harmony only to the trained musician, or the elaborate working plans of the architect or engineer convey to the expert only the clear conception of the building or machine that is in his mind.

We have found the greatest possible gain in the use of these graphs. Over 100 distinct lines of information are given in them monthly. A page of totals is followed by a page on the same subject of gain or loss if values are involved. A zero line through the center, with lines numbered by some convenient unit up and down, shows gain when the line is above this equator and loss when it is below. In the sheets of figures from which this information is drawn, gain is in green ink, loss in lilac, receipts in red, and outgo in blue. The green, lilac, and red correspond with the initials of their meanings. We prefer colored inks as finer lines can be made and when dry they rub less, but colored pencils are often more convenient and answer very well.

For food and per capita we take inventories every 10 days and divide each month into 3 units, the fourth being 1 day for the 31 day months. The decade is much better than the week, for mere moving of the decimal point shows instantly the exact daily average. The 8 days in February is thus the one case each year requiring division. For the number of guests or any item where the daily tendency is important, the curve can follow the daily numbers, but for most things we measure off the monthly point above or below the zero line and connect it with the last month. Then all the information goes into yearly curves and later into 5-year and 10-year periods. We seldom have any need for quarters, but in schools, terms might be useful.

We cumulate most of our charts of figures, inserting a total footing the second month, so that the last figure interlined in red ink is the total from the beginning of the year, while the ink of other colors is the total of each current month. A graph of these cumulations shows tendencies very closely in comparing different years, months, or decades for the same institution, or in comparing any period for similar institutions.

The best colors, after black, are red, blue, green, and lilac. It is wise wherever gain, loss, or receipts are involved to use green, lilac, and red as the initials suggest the meanings.

Take this graph of the cost of the table per day per guest for meat, poultry, fish, butter, eggs, milk, cream, groceries, fruit, vegetables. A cook who can't interpret figures or even read English, can understand if this yellow line, which represents cream, is rising above its normal place, that one or more of four things is happening:

(1) Extravagance in the cream used in cooking and serving to guests.

(2) Use of cream for help.

(3) Allowing it to spoil and waste.

(4) Theft.

When the 10-day inventory is taken and its curve extended one column farther, a quick glance shows in which of the 10 groups of food costs are rising and need special watching.

We keep adding to the 100 sets of graphs now maintained with trifling labor, new information and we get danger signals for things that are going wrong and need correction more easily and cheaply than ever before. I can not urge too strongly on every administrator that he put into these curves every item that merits his study. While they are very useful and impressive in their clearness, compactness, and ingenuity, it is a very simple matter to make them and keep them up when one catches the general principle. It is easy to keep the forms worked out with great skill by experts. Nothing saves an administrator more than intelligent use of cumulative, comparative curves.

THE RESPIRATION CALORIMETER OF THE U. S. DEPARTMENT OF AGRICULTURE AND WORK UNDERTAKEN WITH IT.

C. F. LANGWORTHY.

Chief, Nutrition Investigations, U. S. Department of Agriculture.

The respiration calorimeter installed at the Department of Agriculture has been considerably modified and numerous experimental studies carried on with this instrument as an important part of the nutrition investigations of the Office of Experiment Stations. In its present form the respiration calorimeter differs materially from the apparatus used in earlier experiments, having been greatly improved in construction and with respect to the accessory apparatus used with it. Recently, devices have been installed for controlling, as it enters

the chamber, the temperature of the water current used to carry out the heat liberated in the calorimeter, and for automatically recording the difference in temperature between this water current as it enters and leaves the chamber. This means that some of the most difficult details connected with the calorimeter investigations are now automatically controlled and recorded.

Particular attention is being paid to studies of the comparative ease of digestion of meat and cheese used in comparable quantities. Experiments will be undertaken to test the relative value as sources of energy of culinary and table fats. Along with this work studies will be made of methods of preparing and serving such fats and of their place in the diet.

Hitherto experiments with respiration calorimeters have been made with human beings as subjects or with special forms adapted to tests with laboratory animals or farm animals. During the past year the respiration calorimeter of the Department of Agriculture has been adapted to experiments with plant life and experiments were made in which the respiratory exchange and the energy output of bananas were studied during the active ripening period. There are a great many problems of vegetable physiology of practical as well as of scientific interest which may be studied to advantage with the respiration calorimeter, and it is believed that a great advance has been made in providing new methods for the study of such questions.

The matters briefly referred to here are taken up at greater length in recent publications of the U. S. Department of Agriculture.[1]

[1] The Respiration Calorimeter and the Results of Experiments with it. Reprint (Separate 542) from U. S. Dept. Agr., Yearbook 1910; and The Respiration Calorimeter: Recent Improvements and New Applications. Reprint from *Experiment Station Record*, **24** (1911), No. 7, pp. 601–606.

STATE AND MUNICIPAL DOCUMENTS AS SOURCES OF INFORMATION FOR INSTITUTION MANAGERS AND OTHER STUDENTS OF HOME ECONOMICS.

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The printed page, giving as it does the record of observations, the deductions drawn from them, the discussion they have caused, and the philosophy they have inspired, is the universally recognized and commonest source of information.

Books, using the term to mean the output of publishing houses, great and small, are known and consulted by everyone, in part at least because the publishers and the booksellers see to it that their wares are not overlooked, but most of all because long usage has made us all familiar with this kind of publication. The librarian classifies and catalogues books so that they are readily accessible to the reader, and to them the seeker after knowledge first turns of his own initiative or is first directed.

Periodicals constitute another great group of publications which in general are readily accessible and in which the student commonly seeks information. Possibly because they must be purchased and so have a recognized money value, though without doubt chiefly because perodicals are a well organized and well known group of publications, they are generally well cared for in libraries and well classified and indexed. It follows that a particular article may be readily found from catalogues or from some standard work of reference, such as Poole's *Index of Periodical Literature*, to cite a familiar example, though one more concerned with general literature.

We may group together publications of learned societies and scientific societies and similar associations as a third great division. Some of this literature is sold through the regular channels of trade but much of it is distributed without cost to society members, to libraries, and less commonly to individuals. Perhaps in part because learned societies have existed so long that they have acquired the dignity of age, their publications are valued by the librarian, are usually well classified by him, and accordingly are fairly well known to the expert and to the teacher, though much less commonly to the student.

The publications of private organizations should also be mentioned, namely, such organizations as the Russell Sage Foundation, the Car-

negie Institution of Washington, and the Rockefeller Institute for Medical Research. These organizations justly rank with learned societies, and their publications are appreciated at their full value by the expert and the advanced worker.

The great number of publications of private organizations, for instance the reports of national conventions of various trade organizations, constitute a source of information which is little known, even to the specialist, and perhaps seldom consulted except by those interested in the manufacture or the sale of special products. Simply as an illustration of this class of literature, mention may be made of the report of a convention of the National Association of Master Bakers held in Baltimore in 1910. As is usually the case with such reports, the bulk of the material included is of interest only to the organization, yet there is one paper, Report of Association Fellowship Student at University of Kansas, by H. A. Kohman,[1] which gives the details of some interesting laboratory studies of bread making problems, a paper which should not be overlooked by students of this subject.

In a paper prepared for the American Home Economics Association[2] two years ago the attempt was made to point out the importance of another group of publications usually passed over by the student and neglected by the librarian, yet appreciated by the expert and advanced worker, and really containing material of the greatest value, namely, the documents published by the different branches of the general government. Each one of the other groups of publications referred to would furnish material for a paper. In the following pages attention is directed to a large group of publications which, like government documents, can generally be had for the asking, and like them are too often stored or placed on out of the way shelves by the librarian and neither classified, catalogued, not consulted, yet containing an enormous amount of interesting and valuable material. These are the publications of States and municipalities.

That such publications cover a wide range of subjects most of us are aware. Nevertheless, it may be instructive to consider the list in some detail.

Massachusetts, for instance, issues publications which have been grouped under the following heads: Constitution and constitutional conventions; executive and staff; inspection and regulation, which would include the Board of Agriculture reports, the reports of the

[1] Rpt. Thirteenth Conv. Nat. Assoc. Master Bakers, Baltimore, 1910, p. 29.
[2] Jour. Home Econ., 1 (1909), pp. 227–252.

State Board of Lunacy and Charity, the Dairy Bureau, and the Bureau of Statistics of Labor; institutions, which include agricultural experiment station publications as well as reports of educational, penal, and corrective institutions; judiciary; and miscellaneous documents; with the colonial and provincial reports grouped in an appendix. This classification is quoted from R. R. Bowker's[3] standard work of reference dealing with state publications, which gives a list only of publications and makes no attempt to give information as to the contents of the documents listed. Nevertheless, it is of great value as it is the only published list of the sort which includes all the States of the Union.

A reference work dealing with state documents which is of the greatest importance is the Index of Economic Material in Documents of the States of the United States,[4] by Adelaide R. Hasse, prepared for the Department of Economics and Sociology of the Carnegie Institution of Washington and published by that Institution. A volume of this series is devoted to each State and it is the author's purpose to list under appropriate headings all the documents issued up to 1904. For instance, the Illinois volume includes documents from 1809-1904. The States so far included are California, Delaware, Illinois, Kentucky, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont, other volumes being in progress. It is the intention to give a complete list of the public documents of each State. The various documents are not completely indexed, only the economic material having been selected for this purpose. As is perhaps inevitable, the index is more or less selective. Nevertheless, the work as a whole is the only published guide to the contents of state documents and gives information which can not be readily found anywhere else.

The usefulness of the documents listed may be gathered from some of the headings followed in classifying them, as, for instance: Industries, such as bakery trade, canning, clothing trades, dairy industries, etc.; education; labor, with such subdivisions as child labor, wages, house industries, and cost of living; maintenance, which includes charities, public institutions, and related subjects; water supply; natural resources; population, betterment; sewerage; and many others.

Appreciating the great importance of state documents, the Library

[3] State Publications—A Provisional List of the Official Publications of the Several States of the United States, New York, 1908, pp. 28–59.

[4] Index of Economic Material in Documents of the States of the United States, Vols. 1–10, 1907–1910, Baltimore, Md.

of Congress has recently commenced the publication of a monthly bulletin giving the documents received by the Library, classified by States under headings such as agriculture, statistics, etc., and so annotated that some general idea at least may be obtained of the character of the contents of the documents. This publication[5] should be in the hands of everyone who wishes to follow literature of this character. It is issued by the Division of Documents of the Library.

That the institution manager as well as other students of Home Economics can find very important material in State and municipal publications, and oftentimes information which could not be found anywhere else, can perhaps best be demonstrated by citing some particular instances covering a rather wide range of topics out of the many which might answer the purpose equally well or maybe better. The material has been grouped under the following heads: Expenses and expenditures; water supply and sewage disposal; building materials and their use; supplies and equipment; housing systems and other similar problems; institution dietetics and other food and nutrition topics; problems of labor and service; and educational opportunities and courses of instruction.

Expenses and Expenditures.

The question of expenses and expenditures is one which first confronts the institution manager or the student of institution problems. If one desires information on this subject it must be sought in the reports of the various institutions which give an account of the income and expenditures, and nearly every institution publishes at least an annual or a biennial report. If it is desired to make a comparison between the cost of food or other supplies for the current year in comparison with other years, reliable statistical data can be found in the publications of the State Bureau of Statistics or similar department which most States maintain. For instance, a recent annual report of the Bureau of Statistics of New Jersey[6] contains a paper on the Cost of Living in New Jersey, by W. C. Garrison, which gives food prices and other items. The recently published report of the Massachusetts Bureau of Statistics,[7] entitled Report of Commission on the Cost of Living, is a very exhaustive inquiry into the causes of the high cost

[5] Monthly List of State Publications, Washington: Govt. Printing Office.
[6] Ann. Rpt. Bur. Statis., N. J., 1909, pp. 141–151.
[7] Rpt. Mass. Bur. Statis., 1910, pp. 752 (House Doc. 1750).

of living and discusses industrial conditions, market conditions, the marketing of commodities, wholesale and retail prices, and other similar problems.

Other instances might be cited as the number of articles of this sort is large.

Water Supply and Sewage Disposal.

Questions of water supply and sewage disposal are of importance to the institution manager and to everyone else. In collecting information on such a subject state and municipal documents can not be overlooked. Existing conditions and plans tried in many institutions can often be learned by a study of annual reports, which quite commonly give plans of new buildings and descriptions of other equipment, particularly anything which has been recently installed. The bulletin[8] of the New York State Department of Health for March, 1907, contains an interesting paper on The Pollution and Self-Purification of Ice. Mention may also be made of the numerous reports of original work along various lines carried on at the Water Experiment Station of Lawrence, Massachusetts, and reported in the publication of the Massachusetts State Board of Health.

The public institution can often control conditions as the community can not, since it equips its own water supply and sewage disposal system. As a publication[9] bearing on this subject may be mentioned A Preliminary Report on the Artesian Well System of Georgia, by S. W. McCallie, published by the Geological Survey of Georgia.

A Check List of Works Relating to the Water Supply, Sewers, etc., of the City of New York in the New York Public Library[10] contains titles of reports and other documents. This it is interesting to consult not alone because it contains titles of useful works, but also because it furnishes a good illustration of the careful indexing and cataloguing of municipal documents.

Building Materials and Their Use.

The intelligent and economical construction of buildings should be based upon a knowledge of building materials. The Geological Sur-

[8] Mo. Bul. N. Y. Dept. Health, 23 (1907), No. 2, pp. 2–6.
[9] Bul. N. Y. Pub. Libr., 5 (1901), No. 4, p. 133.
[10] Ga. Geol. Survey Bul. 7, 1898.

vey of Georgia has published an exhaustive report[11] on the Marbles of Georgia, by S. W. McCallie, which contains the results of the chemical and physical examination of marbles as well as much other interesting data. A bulletin[12] of the Wisconsin Geological and Natural History Survey, entitled Building and Ornamental Stones of Wisconsin, by E. R. Buckley, also contains much information of general interest.

In the same connection may be mentioned The Uses of Hydraulic Cement,[13] by F. H. Eno, and The Manufacture of Roofing Tiles,[14] by W. G. Worcester, both published by the Ohio Geological Survey.

The use of concrete in the construction of farm buildings is discussed together with a number of other questions in an article[15] by R. M. Washburn in an annual report of the State Dairy and Food Commissioner of Missouri.

Supplies and Equipment.

The equipment of an institution or other enterprise, like the plans followed in the construction of buildings, is very commonly described in annual reports and similar publications. Of special interest are detailed discussions of particular sorts of equipment. For instance, in an article on Barn Plans and Conveniences, by R. M. Washburn, in an annual report[16] of the State Dairy and Food Commissioner, Missouri, much information is presented which is of interest in this and in other connections as well, for example, the comparative value of shingles and prepared roofing, the gasoline engine and the approximate cost of different sizes, the equipment of mills for grinding feed or other materials, and the use of concrete construction materials which has been mentioned in another section. This article also takes up the problem of a sanitary dairy and in this connection gives detailed directions for the installation of a power laundry of a size suitable for a dairy farm.

The question of laundry equipment is discussed by Miss Ilena Bailey

[11] Ga. Geol. Survey Bul. 1, 1907, 2. ed., rev. and enl.
[12] Wis. Geol. and Nat. Hist. Survey Bul. 4, 1898, Econ. Ser. 2.
[13] Ohio Geol. Survey Bul. 2, 1904, 4 ser.
[14] Ohio Geol. Survey Bul. 11, 1910, 4. ser.
[15] Ann. Rpt. State Dairy and Food Comr. Mo., 1 (1907), p. 145.
[16] Ann. Rpt. State Dairy and Food Comr. Mo., 1 (1907), pp. 129–165.

in a bulletin[17] of the Missouri State Board of Agriculture, in a report of the Missouri Home Makers' Conference Association.

The New York State Water Supply Commission has quite recently published a pamphlet[18] dealing with water power for the farm and country home, by David R. Cooper, which discusses the use of turbines and the older types of water wheel as well as the generation of electric power by means of water power. The application of the power to domestic processes, including cookery, to the running of laundry machines, and in very many other ways in the home and dairy and on the farm is also considered.

If one is interested in the relative value of fuels, such documents as Report on the Coals of the Three Forks of the Kentucky River, by J. M. Hodge, published by the Kentucky Geological Survey[19] is worth attention, as it contains a large number of analyses in addition to descriptive matter and miscellaneous information.

Systems followed in the purchase of supplies, including food, and much data relating to the matter of handling, storing, and issuing of supplies, and the relative economy of different systems can be gathered from institution publications. The question of the home production of vegetables, dairy products, hay, and other supplies involves the same agricultural questions as arise on any farm, and others as well, as, for instance, the opportunity offered for benefiting the inmates by having them take part in out of door manual labor. Agricultural problems are considered in publications of the state departments of agriculture, as are others of general interest, facts which the institution manager should know, as well as his farm superintendent and the student who hopes to fill some such position.

Housing Systems and Other Similar Problems.

If the student wishes to know the success of various systems of housing, information can be found in reports of institutions which discuss the cottage system in comparison with the large building, and related topics. In the same way it is to reports of public institutions that one must turn for information regarding various systems of management which are in use.

[17] Water Power for the Farm and Country Home, N. Y. State Water Supply Com., Albany, 1911.

[18] Monthly Bul. Mo. Bd. Agr., 8 (1910), No. 2, pp. 33–41

[19] Ky. Geol. Survey Bul. 11, 1910.

Institution Dietetics and Other Food and Nutrition Topics.

The question of institution dietetics is naturally one of great interest and it is one subject on which many papers have been published. It is interesting to note that one of the earliest American investigations on such a topic, namely, A Report on Food and Diet, etc.,[20] by John Stanton Gould, which summarizes a large amount of data regarding food and other conditions in American public institutions, was conducted and published in 1852 under the joint auspices of the Commissioners of Immigration and the Board of Governors in the New York Almshouse Department.

Not only do reports of public institutions contain information as to the amounts of food supplied and its cost, but also regarding the character of the food and methods followed in preparing and serving it. The publication of menus is quite usual.

Of special investigations may be mentioned the extended series of dietary studies carried on in New York state hospitals for the insane by Professor W. O. Atwater, and published in the annual reports[21] of the New York State Commission in Lunacy.

These papers report an extended series of dietary studies, discuss the results at length, and propose dietary standards. One of their most valuable features is the collection of tables of quantities of food materials which may be supplied for some given material taken as a standard, for instance the amount of different vegetables or other foods which may be substituted for 100 pounds of potatoes in making up menus. Included in this report is a paper, Recipes for Cooking and Suggestions for Improvement in Kitchen Administration,[22] by Maria Daniell, which gives a large number of recipes in quantities sufficient for 100 persons. In these reports Professor Atwater has presented a mass of figures and observations, discussed many problems, and drawn many deductions. No student of institution dietetics can afford to be ignorant of the details of these investigations.

[20] A Report on Food and Diet, with Observations on the Dietetical Regimen, Suited for Almshouses, Prisons, and Hospitals; also on Heating, Ventilation, etc., with Practical Recommendations. New York, 1852.

[21] 11th Ann. Rpt. N. Y. State Com. in Lunacy, pp. 190–566; 13th Ann. Rpt. N. Y. State Com. in Lunacy, pp. 38–322, Albany, 1902.

[22] Recipes for Cooking and Suggestions for Improvement in Kitchen Administration. 13th Ann. Rpt. N. Y. State Com. in Lunacy, pp. 145–191. Albany, 1902.

In one of the reports[23] of the Institutions Commissioner of the City of Boston, Mrs. Ellen H. Richards and Sarah E. Wentworth report the results of dietary studies in nine public institutions in Boston, and make a number of recommendations based on their work.

In connection with extended investigations on the Etiology of Pellagra,[24] a disease, which as everyone knows has been attributed to the eating of corn meal in quantity, or more specifically, to the eating of spoiled corn meal, dietary studies were made and included in the reports published in bulletins of the Illinois Board of Health. The work was carried on by W. H. Buhlig, and by J. F. Siler and H. J. Nichols. No causative relation between the use of corn meal and pellagra was shown by the work.

It is interesting to note that Buhlig reported tests with moldy corn meal to ascertain the resistance of molds to heat and whether they would survive in cooking processes. He found that corn meal mush and hominy, made in the usual way followed at the institution, by boiling for about 2 hours, was sterile.

The preparation of food is not infrequently taken up in documents published under state auspices. In a paper on Corn Oil—Its Possible Use as an Adulterant in Lard and Its Detection,[25] by W. McPherson and W. A. Ruth in the Annual Report of the Ohio Dairy and Food Commissioner for 1906, tests are reported of the culinary qualities of lard and corn oil mixtures. The paper is also valuable as a contribution to food chemistry and as a source of information regarding corn oil—a food material of growing importance.

The paper, How to Can Fruits and Vegetables on the Farm,[26] by Mrs. Mabel E. Moore, published by the Missouri Board of Horticulture, as a reprint from its Annual Report for 1908, is worth the attention of the institution manager, since it deals with the question of canning in quantity under home rather than under factory conditions.

Most of the documents referred to have been issued under state auspices. A document prepared in this way, published by the State Board of Charities of New York, in 1906, and printed by the Department of Public Charities of New York City in the same year, is the

[23] Report to his Honor the Mayor, and to the Institutions Commissioner, on the Dietaries of the Nine Institutions of the City of Boston. Ann. Rpt. Inst. Comr. City of Boston, 2 (1897), pp. 206–213.

[24] Ill. Bd. Health Mo. Bul., 5 (1909), No. 7, pp. 417–478.

[25] Ann. Rpt. Ohio Dairy and Food Comr., 21(1906), pp. 18–23.

[26] Ann. Rpt. Bd. Hort. Mo., 2 (1908), pp. 202–214.

excellent summary, Dietaries for Charitable Institutions, by Florence C. Corbett, which discusses institution food problems and suggests ways for solving them.

The institution problem is of necessity on a larger scale than that of the home, yet the question must often arise in one case as in the other—is it cheaper to cook foods or to purchase them ready cooked? One of the most careful studies of the relative cost of the two systems is that carried on by the Committee on Domestic Service of the Boston Branch of the Association of Collegiate Alumnae, entitled The Relative Cost of Home-Cooked and Purchased Food, and published in the Massachusetts Labor Bulletin for August, 1901.[27]

Food inspection, dairy inspection, and similar work make up a large part of many state and municipal documents. Of recent legislation enacted on this subject may be mentioned Rules and Regulations Governing Butcher Shops and Meat Stalls[28] in Porto Rico.

The storage of food almost inevitably involves some loss and accurate information regarding the character and extent of such losses under different conditions is needed by the institution manager. The Kansas Board of Health has reported studies by J. T. Willard[29] of the losses involved when flour is stored in sacks and when butter is stored under different conditions such as are usual in the butter trade.

The question of the protection of the manufacturer of good goods and of the people by means of legislative enactments for the suppression of adulteration of foods, drugs, paints, oils, and other supplies is a very important one, and one which is growing very rapidly in the amount of attention it is receiving. Documents which report such work are very numerous and commonly include the publications of the state board of health, the report of the state dairy and food commissioner, or the bulletins of the state department of agriculture or the agricultural experiment station, as the carrying out of such inspection work is usually entrusted in the several States to one or another of these agencies. The publications cited give not only an idea of the character and extent of the work (and it is interesting to note that improvement in the purity of the articles considered is very apparent after the laws have been in force for a time) but also include many discussions of food hygiene and general food problems.

[27] Mass. Labor Bul. 19. 1901, pp. 67–98.

[28] Rules and Regulations Governing Butcher Shops and Meat Stalls, Porto Rico: Dept. Health, Charities, and Correction, 1911, p. 6.

[29] Bul. Kans. Bd. Health, 7 (1911), No. 1, pp. 9–14.

A paper, Simple Household Tests for the Detection of Adulteration in Foods,[30] was published a few years ago by the Utah Dairy and Food Commission. A later publication on this subject by E. H. S. Bailey is entitled Some Kitchen Tests to Detect Adulterations in Common Foods.[31]

Closely related to the pure food and drug work is that concerned with the inspection of dairies, bakeries, food manufactories, laundries, etc., of interest to the public institution housekeeper as well as to the housewife, since each depends in large measure upon the manufacturer.

The reports referred to above contain many articles on such topics, most of them having to do with conditions under which food products are manufactured.

The municipal ordinances, rules, and regulations regarding the handling and care of food, food protection, food manufacture, and other topics which have to do with clean food from a trade standpoint are published in numerous municipal or state documents. It is interesting to note that the U. S. Public Health and Marine Hospital Service collects and reprints these contributions to public health. For instance, a recently published summary[32] contains the rules and regulations adopted in American cities since January 1, 1910.

An extended study[33] of conditions in public laundries and other factories was reported in the Massachusetts State Board of Health Report for 1906.

Questions which have to do with the conditions of manufacture of canned corn and other canned goods are included in the report of factory inspection published in annual reports of the Bureau of Factory Inspection of the New York Department of Labor. Ventilation, sanitation, and other questions of hygiene are considered, as well as hours of labor and related matters. In general, it is in reports similar to those just enumerated that matters pertaining to ventilation and other questions of hygiene are considered.

Food hygiene is one of the very important divisions of food and dietetics. An interesting question was studied by H. E. Barnard and H. E. Bishop under the auspices of the Indiana State Board of Health,

[30] Utah Dairy and Food Com., 1906, p. 15.

[31] Bul. Dept. Food and Drug Insp. Mo., 3 (1911), No. 1–3, pp. 34–42.

[32] Pub. Health and Mar. Hosp. Serv. U. S., Pub. Health Rpts., 26 (1911). No. 47, pp. 1842–1849

[33] Mass Bd. Health Rpt., 1906, pp. 449–619.

namely, The Solubility of Zinc Electroplate in Lemonade and Citric Acid Solutions,[34] the work being undertaken to ascertain the possible harmfulness of galvanized iron containers for acid materials. As a result of their work, the State Board of Health issued a rule forbidding the use of such containers in the manufacture and storage of acid drinks.

The Effect of Cold Storage upon Domestic Fowls[35] was studied under the auspices of the Buffalo Department of Health, by W. G. Bissell, and the results published by the Board in a paper with the above title, and summarized in one of the Buffalo Sanitary Bulletins. This work is a valuable contribution to the subject of methods of handling poultry for cold storage, etc. An excellent chemical study of drawn and undrawn poultry in cold storage, by W. F. Boos, and a bacteriological study of such poultry, by H. R. Brown, were reported in the Massachusetts State Board of Health Report for 1907.[36]

H. E. Barnard has published in a report of the Indiana State Board of Health a study of The Bacterial Condition of Protected and Unprotected Foods at Restaurants, Meat Markets, Grocery Stores, Bakeshops, and Fruit Stores,[37] in which he reaches the conclusion that foods kept in glass cases are practically free from dust and accompanying bacteria, while food on exposed tables and racks is surrounded by air heavily laden with dirt and micro-organisms. His study of the effects of cleanliness of floors and utensils and other related data are of interest in the institution and indeed wherever food is handled or stored.

Similar work is included in a bulletin of the Texas Board of Health, which discusses the general problem and briefly refers to a bacteriological study of samples of commercial milk, grapes, and berries exposed for sale on the sidewalks without protection from flies and street dust. J. S. Abbott,[38] who made this study, states that in every case pathological bacteria were found. Numerous other similar studies might be cited.

Much has been written about the possibility of the transmission of tuberculosis by means of milk used as food, and the possibility of transmission of animal diseases in general to man. All who are interested in such questions should read the article on Animal Diseases

[34] Ann. Rpt. Bd. Health Ind., 27 (1908), pp. 254–256.
[35] Buffalo Sanit. Bul., n. s., 2 (1909), No. 3, pp. 1, 2.
[36] Mass. Bd. Health Rpt., 1907, pp. 263–283, 285–336.
[37] Ann. Rpt. Bd. Health Ind., 27 (1908), pp. 517–523.
[38] Bul. Tex. Bd. Health, 4 (1910), No. 11, pp. 16–18.

Transmissible to Man,[39] by T. Smith, published in a bulletin of the State Board of Health of Massachusetts. It is interesting to contrast the calm and judicial statements of such an authority with the loose and biased statements which are so often encountered.

The list of similar articles on food topics in state and municipal documents is a long one and many other papers might be cited.

Bibliographies are always a help to the student and are often almost indispensable. Public libraries quite commonly publish bibliographies or check lists, sometimes as separate documents and sometimes included in library bulletins, or other similar documents. Several years ago the New York State Library issued a Bibliography of Domestic Economy,[40] limited to works in English, which includes titles on shelter, heat, light, ventilation, clothing, administration, sanitary precautions, cleaning, and other such subjects as well as on economics of consumption, domestic economy, food, cooking, kitchen, dining room, gastronomy, household management, etc.

The list[41] of books on domestic science in the Boston Public Library, which has been recently compiled and published, is a classified list of titles of a very large and fine collection of works on this subject arranged under the following headings: Domestic economy, household management; food, nutrition, diet, digestion; beverages; cookery; the table, gastronomy, dining, table decoration, table service, entertaining; and dress, clothing. The institution dietitian as well as the teacher and the student will find this list invaluable. It is interesting to note that the Boston Public Library contains as a part of the collection included in this list the books, chiefly on domestic science and cookery, collected by Miss Maria Parloa and bequeathed by her to the Library.

A bibliography on hygiene published in 1894 by the library is also of interest for the obvious bearing of this subject on the many problems of institutions management.

The New York Public Library has published a list[42] of the works it possesses on prices, which includes titles on the regulation of prices, theory of prices, and other similar subjects, as well as titles of books and articles dealing with the prices of foods and various other commodities.

[39] Monthly Bull. Bd. Health. Mass, n. s., 4 (1909), No. 12, pp. 264–276.

[40] N. Y. State Libr. Bul. 52, 1901 (Bibliography 22).

[41] A List of Books on Domestic Science in the Public Library of the City of Boston, Boston, 1911, pp. 78.

[42] Bul. N. Y. Pub. Libr., 6 (1902), No. 4, p. 115.

Problems of Labor and Service.

The total number of articles and volumes which have to do with the statistics of labor, wages, and all that pertains to this great question is large, as many States have bureaus of labor under one name or another. Aside from its obvious relation to institution management, such work has a very important sociological relation to the subject, as it has to do with many factors which affect the lives of inmates of institutions for charity and correction before they enter the institution, and which may be the cause of their present condition.

The question of adequate help is of great importance to the housekeeper in the institution as well as in the home.

A contribution to the literature of the subject is The Household Servant Problem in Maine,[43] a report of an exhaustive inquiry, which is published in a recent report of the Bureau of Industrial and Labor Statistics for the State of Maine, and is full of ideas and good sense in addition to being a carefully compiled record of facts bearing upon the case.

Educational Opportunities and Courses of Instruction.

The student of institution management, like other students of Home Economics, is interested in the general field of education and especially in the courses which are offered in different institutions which are needed for training in this special subject.

In many States reports are published which outline courses and give much other information regarding the work in secondary schools, normal schools, colleges, and universities. Furthermore, state documents contain an enormous number of published reports which discuss educational questions. The reports of the activities of women's institutes and farmers' institutes, and of other institute and extension work, are very commonly published as state documents. Reference has already been made to the report of the women's institutes in Missouri, and mention may also be made of a similar publication reporting the women's institute work in Illinois.

Conclusions.

The material here brought together by no means exhausts the subject. Indeed, it cites only a very small proportion of the papers which

[43] Ann. Rpt. Bur. Indus. and Labor Statis. Me., 24 (1910), pp. 311–393.

might be mentioned and indicates only a few of the uses which may be made of state and municipal documents. However, the illustrations selected are perhaps sufficiently numerous to make clear to the student of institution management and of other branches of Home Economics the value of literature of this character.

It would without doubt be conceded that the class of literature under consideration is generally neglected, and if we are also agreed that it is valuable, it logically follows that some method should be devised for collecting and making use of the material. If students could be induced by their instructors to look over regularly and systematically the public documents of all sorts received in the libraries to which they have access and list articles which they consider of value, and perhaps abstract some of the more important papers, they would gain knowledge as to methods of really using libraries as well as special information of use in connection with their work. If such a plan were followed in a number of institutions, and some method could be found for publishing the bibliographies and notes, the work might be made of general use.

Then too, it would be of great value in training the student if he were assigned some topic for special study, for an essay, or for a thesis, which would necessitate consultation of public documents and other literature too often passed by for the more readily accessible text-book and general work of reference. Some one, at least, of our large and well equipped colleges or universities might well assign to one of its librarians the task of collecting documents of the sort under consideration and preparing bibliographies of publications and articles of interest to its Home Economics department.

In Home Economics, as in all other lines of work, we need laboratory research and other advanced work. It is also true that progress would be more easily made and more would be accomplished if we were thoroughly familiar with what had been done in the past and recorded for our information. The person who has the patience to collect and digest data already reported and made available will often render as great and as permanent service to his chosen subject as the successful investigator. He has an advantage in that he does not require expensive laboratory equipment, but only books and paper and pencil. Even the books he need not buy if he works with those we have been considering, for States and cities will in almost every case willingly send them gratis to libraries on request and very often to individuals.

PRINCIPLES OF MANAGEMENT APPLIED TO SCIENTIFIC MANAGEMENT.

ROYAL R. KEELEY.

Tabor Manufacturing Company, Philadelphia.

Under the present day method of scientific management, industrial plants are increasing their output, raising their wage schedule, and lowering the sale price of their product.

This strikes at the root of the high cost of living. Increased production of necessities and increased wages with which to buy them means better conditions for the employee and better business for the employer.

The change is being wrought by expert direction of work. The wastefulness of the old method, which left organization of work to untrained workers, was first recognized by Dr. Frederick W. Taylor. Scientific management is based on his experiments in the best method of doing given pieces of work.

Specialists are in charge of outlining and apportioning tasks, and of reducing instructions to writing wherever possible. The task and bonus system, which is fundamental in scientific management, consists in paying the workman a reward or bonus for doing a specified quantity of work in a specified way.

Scientific management does not aim to obtain excessive speed, but to eliminate waste of time and strength. It cultivates in the workman mental alertness and self-confidence through accurate work. He does not work harder but more efficiently.

The system saves the management a mass of detail.

Educational institutions are as yet far behind industrial plants in scientific management, while their possibilities for improvement are even greater. The various departments should be correlated; office routine should be standardized; the purchase and handling of supplies should be reduced to a system. Useless labor should be eliminated in all routine work. The efficiency of buildings and equipment should be extended through longer hours of use.

We have no administration in our colleges and universities as this term is applied in industrial organizations, except in our football teams. They achieve alertness, dexterity, and activity through motion study, team work, and attention to health and food. Our institutions as a whole would gain by similar organization.

Bibliography suggested by Mr. Keeley's paper: Van Nostrand Co., New York City: Gilbreth, Motion Study; McGraw Hill Co., New York City: Taylor, Principles of Management and Shop Management; Going, Principles of Industrial Engineering; Evans, Scientific Management; Gantt, Work, Wages and Profit; Day, Industrial Plants; *Engineering Magazine*, New York City: Brander, Scientific Management.

MARKET INSPECTION WORK CARRIED ON BY THE WOMEN'S MUNICIPAL LEAGUE.

AMY ALDIS BRADLEY.

Chairman Market Committee, Women's Municipal League, Boston.

The Market Committee of the Women's Municipal League of Boston about two and a half years ago made a preliminary investigation into the condition of the markets and provision shops in Boston, with a view to undertaking further work for their improvement.

The best shops were found, in the main, to be clean and sanitary, but the shops in the poorer parts of the town were often very dirty and sometimes disgustingly so. It was common to find walls incrusted with dried blood or fish scales, floors thick with dust and dirt, mingled with scraps of meat, feathers, rotten vegetables, and fruit skins, and the corners piled high with wood, old clothing, newspapers, and rubbish. In some cases, when sweeping was attempted, dust, garbage, and all was thrown into closets, where it remained indefinitely. Living rooms frequently opened out of these shops, and in these dirt, disorder, and smells added to the unsanitary conditions. The board of health, after conference with the market committee, gave the appointment of an unpaid market inspector to a woman selected by the Committee, her salary for three months being provided by the League and South End House.

The object of the League was to show the value of inspection which should be thorough and which should aim at the education of both dealers and consumers in the importance of cleanliness.

The need of this education is shown by the following incident: During a visit of our inspector, a shopkeeper was selling soda water to a group of school children, twenty of whom drank in succession from one unwashed glass. She remonstrated, and with a desire to please

her the man seized the glass and rinsed it in water that had just been used for scrubbing the floor.

In spite, however, of the difficulties arising from the ignorance of the shop keepers, our inspector succeeded in bringing about some improvement in about two-thirds of the seventy shops under inspection. This was effected mainly through tact and kindliness. Our inspector seldom had to use the authority of her official position, although without it her work would have been much harder. As an illustration of the improvement which she brought about I may mention one shop where the proprietor was at first somewhat unresponsive, although, at our inspector's suggestion, he gathered from the corners of his shop enough garbage to fill five barrels. A few weeks later, after she had made him several visits, he showed her with pride his shelves covered with clean white oil cloth.

Through South End House our inspector had opportunities for interesting women who buy at the shops and was able to influence them as well as the dealers. The result of this inspection was so satisfactory that we later engaged an inspector by the year who was given the same appointment by the Boston Board of Health. She is still working for us.

In the autumn of 1909, at the Boston 1915 Exposition, the Market Committee had an exhibit—showing models of a dirty shop and a clean one. This awakened so much interest that later in the winter, in conjunction with other exhibits of the Women's Municipal League, it was shown at 13 settlement houses and the following year at public schools. The interest shown in our exhibit was amazing. At one of the settlements over 1000 persons visited it. Talks were given and so many of the poor women living in tenements showed keen interest in the condition of the provision shops in their neighborhoods that the market committee formed the plan of organizing groups of these women in different parts of the city to do active work among the markets. The members of these groups, called "tens," keep watch of the shops at which they trade and send reports to their respective chairmen, who, in turn, pass them on to the inspector, and she visits them herself as often as is necessary. The form of report is as follows:

Name of shop.....
Name of proprietor.....
Address.....
1. Is there a place where those from whom you buy can wash their hands?
.....

2. Is the food protected from dust and flies?.....
   (A) By glass?.....
   (B) By netting?.....
   (C) Does the netting touch the food?.....
3. Are the doors and windows screened?.....
4. Is all the food raised 18 inches from the floor?.....
5. Do the buyers handle the bread, candy, etc.?.....
6. Is the milk kept in cans?.....
7. Would the floor soil your dress?.....
8. Is there a living room back of the store?.....
   Is there a toilet on the same floor as the store?.....
9. Are receptacles provided for the garbage?.....
10. Remarks on cleanliness.....
    Reported by.....
    Address.....
    Date.....

It is now about a year and a half since these groups, or "tens," of women were started and there are now 187 women belonging to them. They are most helpful in spreading interest and knowledge among buyers, and their influence undoubtedly extends far beyond the women who compose them. As they increase in numbers they will, we believe, prove a potent means of educating the buying public.

In markets, as in governments, what the people want they will get. Shops cannot be expected to provide more than their customers demand. If the public is satisfied with dirty shops as with dirty governments it will get them. When it persistently demands something better it will get something better. We therefore feel that we are right in laying our emphasis on education—the education of both the buyer and seller in the principles of cleanliness and sanitation and their practical application. The response to our efforts in this direction has been far beyond our expectations. Interest in the cleanliness of provision shops among all classes of women has been amazing and we find this interest spreading along other and kindred lines of work which we have recently undertaken, such as the investigation of candy shops and ice cream factories.

At the present time about 450 shops are on our list, and of these 320 are frequently inspected.

An important part of our work is to have a thorough understanding of the actual methods of handling food in Boston and also what the methods should be. Information as to the ideal methods is not easy to obtain. So far as we can find there is hardly any published information on the subject, and *no* authorities. The task before us

reminds me of a story which I have heard attributed to Mr. W. D. Howells. Mr. and Mrs. Howells were having a discussion as to the proper use of a word. Mr. Howells had used it in a sense which Mrs. Howells did not think correct. "Look it up in the dictionary," said Mrs. Howells. The first example of its use that Mr. Howells read from the dictionary gave it exactly as he used it. "Who is the authority given?" said Mrs. Howells. "W. D. Howells," said he. So it is with markets. We must be our own authorities. We must ourselves gather a body of knowledge based upon what we see with our own eyes and hear with our own ears, combined, of course, with all we can gather as to methods in use elsewhere and all the incidental help we can get from scientific men as well as from practical dealers. The fact, however, that there is no collated body of experience to guide us should make us especially cautious in recommending changes.

As to the actual conditions in Boston, we already have a fairly clear idea. The greatest difficulties are presented by the small shops in poor neighborhoods, such as I have already described. These shops are not only sometimes filthy, but the food is left uncovered; it is black with flies in summer; it is fingered by customers with dirty hands, who punch holes in the crust of the loaves with their black fingernails to test the bread, and who turn over the cakes and feel the meat, fruit, and candy. In some instances where dealers have a better standard than their customers, and have tried to keep their goods covered, they have found that sales were thereby lost. One dealer put up a fence across his shop to keep his customers from handling the food, but some of them objected so strenuously that he had to let them inside. Fortunately in other cases improved cleanliness has led to improved trade, so the outlook is not wholly discouraging.

It is not surprising that these shops are sometimes exceedingly dirty, when one considers the small profits made. A fruit business netting $10 a week is considered "good." When people are barely able to eke out a living, even the small outlay required for ordinary cleanliness is difficult to provide. The great hindrance to sanitary conditions is that the small shops are so numerous and competition so keen that the owners barely make a living and really cannot afford to keep clean. In the interest of the public health, the number of small shops should be diminished by helping the poorest shop keepers into other occupations and preventing others from taking their places. Done in this way and gradually, the change would not result in hardship to the helpless, but would give them time and opportunity to adjust themselves.

We do not yet know enough to form an opinion as to just how this could be brought about. Licensing may help towards the solution by obliging each shop to maintain a certain standard of cleanliness in order to keep its license. This is already done where milk is sold, and it seems as if it might be feasible to extend the plan to all provision shops.

In some foreign cities central markets are maintained in different districts by the municipality, but whether this plan, carried further and excluding all other provision shops, would suit American life is at least an open question. That plan has not been tried here, so far as I know. It is clear that in Boston the number of market inspectors is wholly inadequate. There are, at present, but three for between 3000 and 4000 provision shops. In order to make the rounds as often as they are supposed to, each inspector would have to visit 70 shops a day—manifestly a physical impossibility. More inspectors—enough inspectors to make the work educational and not merely perfunctory—is one of the first necessities.

The most important factor, however, in any improvement, must be the active interest of every housekeeper and mother in the community.

CONCERNING INSTITUTIONAL MANAGEMENT.

SARAH LOUISE ARNOLD.

Dean of Simmons College.

Instruction in institutional management is still in its infancy. In our conferences we must either prophesy in defence of our favorite theories or report progress in our varied experiments. We have not yet accumulated sufficient experience to enable us to generalize with conviction. I have chosen to give a running report of the experience at Simmons College, first with reference to the course of study outlined, and, second, to the demands which have come from the field.

It has been evident from the beginning that the institutional worker most in demand is the woman of maturity and experience, who has developed in other fields the qualities which are essential to success in institutional administration. It is also evident that such women are likely to desire a brief course of instruction, inasmuch as their need of self maintenance is usually pressing; and further, the time which is given to study necessarily deprives them of income and thus augments the cost of instruction.

For the present, therefore, it is clear that the one year course in institutional management will be favored by the students, and upon this our attention for the time being must be centered.

The course which Simmons College has offered for the past few years has brought together in each succeeding year women from twenty-five to fifty years of age,—school teachers, bookkeepers, secretaries, housekeepers, and others, who wished a change of occupation, including many who for the first time faced the necessity of self maintenance outside their own homes. Experience with these groups has taught us to believe that the minimum age requirement for such courses should be twenty-five and the maximum forty. Exceptions may of course be made in favor of candidates of marked ability and good personality, but in average cases these age limits seem essential.

Among the many desirable subjects of instruction we must choose a group which is adapted to class instruction and which meets the general need. Thus far this group has included a general course in chemistry; in the physiology of nutrition; in sanitary science: technical instruction in cooking, in household management, and in accounting; observation and practice in the college dormitories and lunchroom, to which have been added opportunities for additional observation and practice outside the college; and lastly, instruction in marketing and other essentials of institutional administration by the house superintendent, who has charge of the class.

It is evident that the groups occupied in practice under expert supervision must necessarily be small. For obvious reasons the ordinary administration of the college or the dormitory cannot be handed over to students in practice to a degree that would interfere with the purpose for which the dormitory was created. The problem which always appears in practice schools where the apprentice is being trained appears also in this instance. The dormitory can never be first a school and second a dormitory. The class must therefore be adjusted to the practice which can be secured without disturbing too much the routine of household administration. Thus far, groups of two have been assigned to regular service in dining room, kitchen, or corridor, under the direction of the assistant superintendent, and other similar groups have taken turns in meeting the responsibilities of the lunchroom, also under supervision. As these groups become expert, they take charge of different "functions,"—college teas, special dinners, special luncheons served to groups of students or instructors, receptions, and finally, the various social events attending the commence-

ment season. If the class remains until the dormitories are closed and the lunchroom put in order for the vacation, they have added valuable lessons.

Experience thus far goes to prove that the observation and practice under guidance, with interpretation by an expert, reveal in miniature many of the problems of institutional administration, and thus shorten the experience of "trial and error" which the novice would otherwise encounter. This practice, to be valuable, should therefore include typical experiences and should always be wisely interpreted. The opportunity for interpretation comes in the conferences with the house superintendent, which naturally increase in value as the class accumulates experience. Reports from workers indicate that this experience has enabled them to enter upon the work with greater intelligence and to make more rapid progress than could have been possible without their training.

It very soon became evident that the college could not afford sufficient practice, for in the nature of things it offered one type of experience, a homogeneous group, a known income, certain fixed conditions, and one type of equipment. It was with gratitude, therefore, that the college accepted the offer of the Women's Educational and Industrial Union, and sent its students to observe and to practice in their lunchrooms, and particularly to avail themselves of the experience gained in the preparation and administration of school lunchrooms. This opportunity led the students into new fields, where they met a public demand and dealt with new equipment and a new and illuminating set of conditions. Already we are learning that, other things being equal, the student is well prepared when she has been able to partake of the experience of differing institutions.

At this point it seems clear that instruction given after practical experience in different institutions would have much greater value than that which is given to the student who has had no institutional experience. And this leads to the question whether it would not be well to form a course divided into three parts: (1) preliminary instruction; (2) practical experience outside the institution which gives the instruction, (3) a report of experience, conference, interpretation, and instruction. If the institutional students could have the same alternation of study, practice, and interpretation which is possible in the normal school, where the young teacher is being trained, her advantage might be as great as that which accrues to the teacher.

This leads to the suggestion that two certificates might be given to

students who undertake the course in institutional management—the first a tentative certificate, stating that the student has completed the course of instruction; the second a final or senior certificate, given for assured success, with a written or oral report which has been accepted by the department. Such differentiation of certificates would enable the department to differentiate candidates and would at the same time tend to increase the number of valuable reports from the field.

The demands upon the department go to show a wide variety of opportunity in institutional administration, which no single course of instruction could adequately meet. One might definitely prepare students to administer college dormitories; the same student, however, will be confronted by requests to become a dietitian, in the sense of adviser concerning diets;—or she will be asked to buy, cook, and serve diets and teach classes of nurses at the same time;—or she may be urged to take complete charge of a lunchroom, a tea room, the stewardship of a hospital, or the administration of a children's home;—she may be asked to mother and manage a Welcome House; she may be called upon to administer the house of residence of the Y. W. C. A., or the small community which is the modern form of the orphan asylum. It is perfectly clear that here is opportunity not only for instruction in the essentials of dietaries, but economics must dominate the situation, while social service is indispensable. A college-trained woman in the new sense will find all the opportunities she may desire in this varied field—abundant demand for leadership, for education, for executive, for initiative, and for good sense.

Letters of inquiry invariably place personality first, experience second, and training third. These three essentials, all right, give us the ideal woman, who shall administer the ideal institution.

The ideal course gives us first, practice, to learn the alphabet of institutional life, (and this should be genuine practice in a real institution, on the individual responsibility). This prepares the student to understand and profit by instruction, which is the second step. The third step is practice again, this time illumined by the previous training. The fourth step is a return to instruction for the interpretation of practice. Now we are ready for the thesis, for the diploma, and for successful administration.

BUSINESS SESSION.

At the business session Mrs. Melvil Dewey was elected honorary chairman, Miss Adelaide M. Nutting, chairman, and Miss Martha Van Rensselaer, Secretary-treasurer. The existing committees were continued with power to add to their numbers. Other committees may be appointed by the chairman as needed.

The committee upon resolutions, consisting of Prof. Henry C. Wright, Miss MacMillan, and Mrs. Moran reported the following resolution:

> The institution economics section of the American Home Economics Association expresses its keen appreciation of the hospitality accorded by Mr. and Mrs. Dewey and other trustees of the Lake Placid Club to the members of the Association individually, and for the accommodations for public meeting which, owing to the unusual beauty of the surroundings, have made the occasion of the conference especially pleasurable as well as profitable.

By rising vote, this resolution was unanimously adopted.

A special committee, consisting of Mrs. Melvil Dewey, Miss Nutting, Miss Watson, Miss Van Rensselaer, and Mr. Dewey, reported the following resolution, which was adopted unanimously by a rising vote:

> The institution economics section records its profound sense of loss in the death of Mrs. Ellen H. Richards, who was pioneer, leader, and inspirer in a vitally important work, which has developed in the past twelve years a hundred fold in the numbers actively teaching and disseminating her ideals of home and family life which she termed euthenics, or the new science of right living.
>
> As representing many institutions we realize that the influence of her work for many years to come will have great practical value in securing greater efficiency of administration.
>
> Equally with our professional loss do we feel that there has left us a personal friend who always gave generously of her best to every one who sought her sympathy and counsel.

BIBLIOGRAPHY OF HOME ECONOMICS LITERATURE

DEC. 1, 1911.

1. FOOD.

Report on the Study of Meat Proteins. R. C. Moulton. U. S. Dept. Agr., Bur. Chem., Circ. 70. Difficulties in the use of the Kjeldahl method.

Market Classes and Grades of Meat. Louis D. Hall. Illinois Agr. Exp. Station, Bulletin 147, July 1910. Profusely illustrated.

Fresh Beef and Mutton in the Philippines. Report of the Commissary General, pp. 12–14 (1911). Report of experimental studies.

Deterioration of Eggs, as Shown by Changes in the Moisture Content. A. D. Greenlee. U. S. Dept. Agr., Bur. Chem., Circular 83.

The Effect of Present Methods of Handling Eggs on the Industry and the Product. M. E. Pennington and H. C. Pierce. U. S. Dept. Agr., Yearbook 1910. Separate 552.

Aging of Flour and its Effect on Digestion. J. A. Wesener and G. L. Teller. *Jour. Indus. and Eng. Chem.*, December, pp. 912–919.

The Chemical Changes Produced in Flour by Bleaching. G. W. Monier-Williams. *Jour. Soc. Chem. Ind.*, 30, p. 568.

Winter Emmer. M. A. Carlton. U. S. Dept. Agr., Farmers' Bulletin 466.

Changes Taking Place During the Spoilage of Tomatoes, with Methods for Detecting Spoilage in Tomato Products. R. F. Bacon and P. B. Dunbar. U. S. Dept. Agr., Bur. Chemistry, Circular 78.

A New Method for Calculating Water in Canned Tomatoes and the Detection of Added Water to Canned Tomatoes. Leon A. Congdon. *Jour. Indus. and Eng. Chem.*, October, pp. 744–747.

The Estimation of Total Solids in Milk by the Use of Formulas. R. H. Shaw and C. H. Eckles. U. S. Dept. Agr., Bur. An. Industry, Bul. 134, pp. 1–31.

Butter: Pure and Unadulterated, Practical Methods of Determining. Hon. Joel G. Winkjee. *Am. Food Journal*, September, pp. 52–54.

Methods and Results of Paraffining Cheese. C. F. Doane. U. S. Dept. Agr. Bur. of Animal Industry, Circular 181.

Buttermilk Cheesemaking at the Creamery. J. L. Sammis. Wisconsin Agr. Exp. Station, Bulletin 211, May, 1911.

Improved Methods for making Cottage and Neufchatel Cheese. North Carolina Agr. Exp. Station, Bulletin 210, September, 1910.

Direct Measurements of the Osmotic Pressure of Casein in Alkaline Solutions. Moore, Roaf and Webster. *Biochemical Journal*, October, 1911, p. 110.

Report on Vinegar. R. W. Balcom. U. S. Dept. of Agr., Bur. Chem., Bull. 137, p. 57.

Cider Vinegar. Frank E. Mott. *Jour. Indus. and Eng. Chem.*, October, pp. 747–750. A method of detection of certain forms of adulteration.

Report on Spices. A. F. Seeker. U. S. Dept. of Agr., Bur. Chem., Bul. 137, p. 80.

The Uses of Spices as Preservatives. C. Hoffmann and Alice C. Evans. *Jour. Indus. and Eng. Chem.*, November, 1911, pp. 835–837; Jour. Home Economics, December, 1911, pp. 452–459.

Detection of Benzoic Acid in Coffee Extract. H. C. Lythgoe and C. E. March, *Jour. Indus. and Eng. Chem.*, November, 1911, p. 842.

Removing Caffein from Roasted Coffee. *Chem. Abs.*, November 20, p. 3708.

A Simple Method for the Qualitative Detection of Caffein, Salicylic and Benzoic Acids. A. Nestler. *Chem. Abs.*, November 20, p. 3705. From *Arch. Chem. Mikros.*, 4, 225–231.

Determination of Malic Acid. P. B. Dunbar and R. F. Bacon. *Jour. Indus. and Eng. Chem.*, November, 1911, pp. 826–830.

The Determination of Benzoic Acid. Folin and Flanders. *Jour. Am. Chem. Soc.*, October, 1911, pp. 1622–1627.

Some Objections to the Use of Alum Baking Powder. Wm. J. Gies. *Jour. Am. Med. Assn.*, September 2, 1910, pp. 816–821.

Manufacture of Yeast. *Sc. Am.*, December 2, 1911, pp. 404, 506–7. Semi-popular.

Tin Salts in Canned Food and Low Acid Content. (With special reference to canned shrimp.) W. D. Bigelow and R. F. Bacon. U. S. Dept. Agr., Bur. Chem., Circ. 79; *Jour. Indus. and Eng. Chem.*, November, 1911, pp. 832–834.

Calorimetric Determination of Copper in Preserves. H. Serger. *Chem. Abs.*, November 20, p. 3704. From *Chem. Ztg.* 35, 935.

Chemical Food Preservatives. H. L. Harris. *Dietetic and Hygienic Gazette*, September, pp. 530–542.

Some Kitchen Tests to Detect Adulterations in Common Foods. E. H. S. Bailey. Bull. Dept. Food and Drug Inspection of Missouri, 3, 1911, No. 1–3, p. 43.

Experiments with Paper Bag Cookery. Culinary Editor. *Good Housekeeping*, October, p. 564.

Cooking in Paper Bags. *Good Housekeeping*, September, pp. 418–420.

Report on Colors. W. E. Mathewson. U. S. Dept. of Agr., Bur Chem., Bull. 137, p. 52.

2. Nutrition.

The Respiration Calorimeter and Results of Experiments with It. C. F. Langworthy and R. D. Milner. U. S. Dept. of Agr., Yearbook 1910, Separate 542.

Some Desirable Results following Water Drinking with Meals. P. B. Hawk. *Proc. Soc. Exp. Biol. and Med.*, *8*, 1911, p. 36.

Ungastronomic America—The Theory of Wholesome Eating Multiplying the Pleasures of the Table—The Future of Cooking and Eating. Henry T. Finck. *Cent. Mag.*, November, December, January, 1911–12.

The Care and Feeding of Children, Part II. Flora Rose. Cornell Reading Course for Farmers' Wives, Food Series, No. 2.

The Metabolism, Directly Determined, of Healthy Children during Sleep. J. Howland. *Proc. Soc. Exp. Biol. and Med.*, 8, pp. 63–64.

Metabolism Experiments with Albulactin on Artificially nourished Infants. Karl Bornstein. *Chem. Abs.*, November 20, p. 3711 (from *Arch. Kinderheilk*, 56, pp. 16–26).

Nutrition and Growth. H. Aron. *Philippine Jour. Science*, 6, pp. 1–52; abs. in *Chem. Abs.*, September 10, p. 2879.

The Adaptability of the Animal Organism to a Superabundant Food Supply. E. Grafe and D. Graham. *Chem. Abs.*, November 20, p. 3700. From *Zeit. Physiol. Chem.*, 73, pp. 1–67.

The Rôle of Different Proteins in Nutrition and Growth. T. B. Osborne and L. B. Mendel. *Science*, November 24, pp. 722–732.

Protein as a Factor in the Nutrition of Animals. I. A Study of the Physical Constants of Fats from Swine. A. D. Emmett and E. C. Carroll. *Jour. Biol. Chem.*, 9, 1911, pp. 23–25.

New Studies on the Action of Animal Proteins upon Vegetarians. P. Albertoni and F. Rossi. *Chem. Abs.*, September 20, 1911, p. 3106.

The Metabolism of Development. III. Qualitative Effects of Pregnancy on the Protein Metabolism of the Dog. Murlin. *Am. Jour. Physiol.*, October, pp. 422–454.

Studies in Nutrition. I. The Utilization of the Proteins of Wheat. L. B. Mendel and M. S. Fine. *Jour. Biol. Chem.*, November, 1911, No. 4, pp. 303–325.

Studies in Nutrition. II. The Utilization of the Proteins of Barley. L. B. Mendel and M. S. Fine. *Jour. Biol. Chem.*, November, 1911, No. 4, pp. 339–343.

Experimental Studies on Creatine and Creatinine. L. B. Mendel and W. C. Rose. *Jour. Biol. Chem.*, October, No. 3, pp. 213–270.

Feeding Experiments with Isolated Food Substances, I, II. T. B. Osborne and L. B. Mendel. Carnegie Institution of Washington, 1911.

Studies on the Metabolism of Meat, I. Klotz. *Chem. Abs.*, September 20, p. 3107.

The Chemical Energy Transformation in the Dog after Ingestion of Different Quantities of Meat. H. B. Williams, J. A. Riche, and G. Lusk. *Proc. Soc. Exp. Biol. and Med.*, 8, 1911, pp. 61–62.

The Digestibility of White of Egg as Influenced by the Temperature at which it is Coagulated. P. Frank. *Jour. Biol. Chem.*, 9, pp. 463, 470.

Nutritive Value of White and Standard Bread. Hill. *British Med. Jour.*, 1911, No. 2627, pp. 1068–1069.

Influence of Different Sugars on the Digestive Action of Enzymes. H. Sciortino. *Chem. Abs.*, September 20, p. 3112.

Concerning Nucleases. Walter Jones. *Jour. Biol. Chem.*, April, pp. 129–137.

On the Physiological Agents which are Concerned in the Nuclein Fermentation, with Special Reference to Four Independent Desamidases. Walter Jones. *Jour. Biol. Chem.*, April, pp. 169–180.

Mucic Acid and Intermediary Carbohydrate Metabolism. W. C. Rose. *Jour. Biol. Chem.*, October, 1911, No. 2, pp. 123–138.

The Rôle of Lipoids in Nutrition. *Jour. Amer. Med. Assn.* November 4, 1911, p. 1540.

Influence of Saccharin on the Nutrition and Health of Man. Herter and Folin. U. S. Dept. of Agr., Office of the Secretary, Report 94.

Digestion and Absorption of Several Varieties of Raw Starch in the Normal

and Diseased Gastrointestinal Tract. L. Tofanow. *Chem. Abs.*, September 20, 1911, p. 3107.

On the Combined Action of Muscle Plasma and Pancreas Extract on Glucose and Maltose. P. A. Levene and G. M. Meyer. *Jour. Biol. Chem.*, April, pp. 97–107.

The Balance of Acid-forming and Base-forming Elements in Foods, and its Relation to Ammonia Metabolism. H. C. Sherman and A. O. Gettler. *Proc. Soc. Exp. Biol. Med.*, 8, 1911, p. 119–120; abs. in *Chem. Abs.*, November 10, p. 3600.

On the Alleged Formation of Lactic Acids in Muscle during Autolysis. W. M. Fletcher. *Jour. Physiology*, November 20, 1911, p. 286.

The Rôle of Salts in the Preservation of Life. Jacques Loeb. *Science*, November 17, pp. 653–665.

Calcium, Magnesium, and Phosphorus Metabolism in Health and in Gout. P. Ciuffini. *Chem. Abs.*, September 20, 1911, p. 3108.

Laboratory Studies of Pepsin, Pancreatin, and Combinations of these Ferments. A. Zimmerman. *Jour. Indus. and Eng. Chem.*, October, pp. 750–753.

Contributions to the Knowledge of Lecithin. Robt. Cohn. *Chem. Abs.*, November 10, p. 3598.

Heat of Combustion of Compounds of Physiological Importance. Emory and Benedict. *Am. Jour. Physiol.*, 28, p. 301.

Some Energy Factors of the Urine Excreted after Severe Muscular Exercise. Higgins and Benedict. *Amer. Jour. Physiology*, September 1, 1911, p. 291.

Influence of Colloids on Diuresis. Knowlton. *Jour. Physiology*, November 20, 1911, p. 219.

Rickets in Its Early Stages and the Best Treatment to Prevent Deformities. J. W. Cokenower. *Jour. Amer. Med. Assn.*, November 4, 1911, p. 1506.

The Treatment of the Arthritides. L. Litchfield. *Jour. Am. Med. Assn.*, October 21, pp. 1335–1338. Dietetic treatment of gout, rheumatic fever, etc.

3. Hygiene and Sanitation.

A Study of Carbon in Sewage and Sewage Purification. H. W. Clark and G. O. Adams. *Jour. Indus. and Eng. Chem.*, October, pp. 738–739.

Bacteriological Examination of Shucked and Shelled Oysters. Geo. W. Stiles. *Jour. Am Pub. Health Assoc.*, September, 1911.

Pasteurization of Milk in the Sealed and Final Package. *Jour. Am. Pub. Health Assn.*. September, 1911.

Bacteriological Investigations of Commercial Ice Cream in the City of Boston. Edith A. Beckler and Delphine J. Rusosoit. *Jour. Am. Pub. Health. Assoc.*, August. 1911.

Garbage Receptacles. A. M. Hall. *Jour. Am. Pub. Health Assoc.*, July, 1911.

Investing for Health. William J. Cromie, Instructor in Gymnastics, Univ. of Pennsylvania. *Outlook*, October 28, 1911, pp. 479–484. Popular Directions for simple gymnastics and personal hygiene.

The Experiment of a Woman Where Clean Milk Can be Found. The Warelands Dairy. *Boston Cooking School Mag.*. October.

The Bacteriology of Ice. E. O. Jordan. *Ice Trade Journal*, 42, No. 1, p. 31.

The Washerwoman's Part in the World's Sanitation. Bertha H. Smith. *Modern Sanitation*, September, pp. 329–335. Illustrations of washing in various parts of the world.

Street Dust and Street Cleaning in Relation to Health, Comfort, and Economy. J. H. Landis. *Monthly Bull., Ohio State Board of Health*, 1, 1911, No. 3, p. 65.

Public Telephone: Germs' Paradise. T. W. Hillier. *Bull. Texas State Board of Health*, 5, 1911, No. 9, p. 24.

The Dust Menace and Municipal Disease. H. S. Anders. *Jour. Amer. Med. Assn.*, November 4, 1911, p. 1524. Popular.

Probable Tapeworm Infection of Northern Michigan Waters. *Jour. Amer. Med. Assn.*, November 11, 1911, p. 1621.

Intestinal Parasites Found in Individuals Residing in the Northwest. W. E. Sistrunk. *Jour. Amer. Med. Assn.*, November 4, 1911, p. 1507. Semitechnical.

Industrial Diseases. Paul S. Pierce. *North Am. Review.*, October, pp. 529–540.

Venereal Disease and its Influence. J. H. Cunningham Jr. *Jour. Am. Pub. Health Assn.*, June, 1911.

4. Education and Social Work.

The Girl of To-morrow—What the School will do for Her. B. R. Andrews. *Technical Education Bulletin*, No. 9, Teachers College, Columbia University.

Industrial Education. F. H. Sykes, F. G. Bonser, and H. C. Brandon. *Teachers College Record*, September, 1911.

Fundamental Values in Industrial Education. Frederick G. Bonser. *Technical Education Bulletin*, No. 10, Teachers College, Columbia University.

Conservation and Home Life: Housekeeping the Greatest Industry. Mary Pierce Van Zile. *Kansas Farmer*, 49, No. 44, p. 2.

One View of Domestic Science. Mary Leal Harkness. *Atlantic Monthly*, October 1911, pp. 474–479.

Syllabus on Household Management. Mary Louise Furst. *Technical Education Bulletin*, No. 8, Teachers College, Columbia University.

Saving Babies. *Survey*, September 2, 1911, p. 769. Popular.

Annotated List of Text and Reference Books for Training Schools for Nurses. *Technical Education Bulletin*, No. 11, Teachers College, Columbia University.

5. Textiles and Clothing.

The Housework Dress. Mrs. Ralston. *Ladies Home Journal*, November, 1911, p. 31. Attractive designs for home-made housework dresses.

Dressmaking Made Easy. Eleanor Chambers. *Delineator*, December, 1911.

Practical Garments for Many Ages and Uses. *Delineator*, December, 1911, p. 464.

Household Embroideries in Several New Forms. Mildred Chapman. *Housekeeper*, December, 1911, p. 29. Slight variations of ordinary stitches, concise, illustrated, gives prices of stamped articles.

The Making of Bobbin Laces. *Upholsterer*, November 15, 1911, p. 35.

Rag Rug. *House and Garden*, December, 1911, p. 391.

Buyers' Glossary of Upholstery. *Upholsterer*, November 15, 1911, p. 42.

Determination of Linen and Cotton. Herzog. Translated by Ellen A. Beers. *Technical Education Bulletin*, No. 7, Teachers College, Columbia University.

Felted Wool under the Microscope. Leo Pinagel. *Textile World Record*, November, 1911, p. 21.

Defects in Knit Cloth. "Hoosier." *Textile World Record*, November, 1911, p. 112. A description of the defects that are liable to arise in knit goods.

Improvements in Cotton Bleaching. Walter S. Williams. *Textile World Record*, November, 1911, p. 259. Various processes of the art of bleaching by modern methods.

A Handbook of Weaves. G. H. Oelsner. *Textile World Record*, November, 1911, p. 221. A description of stitched rib weave and combination ribs.

Practical Dyeing. Renmark. *Textile World Record*, November, 1911, p. 260.

6. Miscellaneous.

The Cost of the Cranberry Sauce. Chas. L. Chute. *Survey*, December 2, 1911, p. 1281.

Some Work—Hazards which go into a Loaf of Bread. Don D. Lescohier. *Survey*, September 2, 1911, p. 804. Popular.

Rooms in Paper. Nama A. Lathe and Esther Szold. *Manual Training Magazine*, October, pp. 1–8.

The Cost of Living in the Twelfth Century. Dana C. Munro. *Proc. Am. Philosophical Soc.*, 50, 1911, No. 201, p. 497.

A Steam Cooker which may be Attached to Steam Pipes. *Texas Farmer*, 32, No. 28, p. 10.

The Prices of Farm Products. H. C. Taylor. Wisconsin Agr. Exp. Station Bulletin 209, May, 1911.

Electrical Effects Accompanying the Decomposition of Organic Compounds. M. C. Potter. *Proc. Roy Soc.* 1911, B. 84, p. 260–275. Technical. A discussion of the electrical energy liberated by the action of yeast, diastase, and other micro-organisms.

Conservation of the Solar Energy in our Food Supply. *Jour. Amer. Med. Assn.*, November 18, 1911, p. 1700.

MINUTES OF THE FOURTH ANNUAL MEETING, AMERICAN HOME ECONOMICS ASSOCIATION.

The Fourth Annual Meeting of the American Home Economics Association was called to order on Thursday, December 28, 1911, at 9:30 a.m. at the Henry D. Cooke School, Washington, D. C. The President of the Association, Miss Isabel Bevier, was in the chair and in the absence of the secretary-treasurer, Dr. B. R. Andrews, H. L. Knight of Washington, D. C., was designated acting secretary.

Miss Bevier opened the meeting by introducing Dr. W. M. Davidson, superintendent of public schools of the District of Columbia, who delivered the formal address of welcome. Following this address, Miss Bevier made the following response:

Home Economics in 1912.

"I am sure we are all thinking at this hour not so much of those who are present as of the one who has welcomed us so many times and who was for so many years the guiding spirit in this Association. Mrs. Richards' place can not be taken by another. It will need many of us to accomplish what she did single-handed and alone, and I am sure we all realize the added responsibility her loss brings to each of us.

We have come back after three years to the place in which this Association had its formal organization. Perhaps it is well to stop long enough for a backward glance over the way we have passed. Boston was our first mile stone, St. Louis our second. There have been steady accessions to our ranks, not only of individuals, but of groups, so that on December 1 our membership numbered 1078 and our affiliated associations 18. Moreover, the Journal, the source of so many hopes and fears and labors, under the wise guidance of Mrs. Abel has grown steadily in favor, in interest, in helpfulness, and is today an exponent of the best Home Economics has to offer. All these are what we might call internal causes for congratulation and there are yet others. Home Economics has made a place for itself in the thought and life of the people, in the newspaper world, whether it be the county weekly, or the city daily, or the monthly magazine.

All of them 'according to their lights' give Home Economics a place. That means it is discussed by all sorts and conditions of people. Moreover, the Home Economics of the county weekly or of the city daily is quite as good as the science of the daily. That may not seem a great attainment, but it is really when you consider how old is science and how young is Home Economics.

Home Economics has made a large place for itself in our public school system, the people's college. Unfortunately, I can give the statistics of only one state, but in Illinois in the past three years the number of counties teaching Home Economics has increased from 27 to 51 and the number of high schools from 42 to 96. As your representative I was privileged to see the place it has made for itself in the far West. Judging from the numbers and the enthusiasm of the public meeting and the private conversation, one gets the impression that Home Economics in the mind of the Californian is second only to his zeal for his climate and his fair land.

East, West, and North, Home Economics is entirely respectable and sometimes even highly esteemed 'for its works' sake.' In the conservative South its place is not yet so assured. The South still retains the old definition for education and culture and has had less interest in the kind of Home Economics that is both educational and cultural. However, interest is now awakening and great progress is being made in the development of the subject.

This survey leads to certain obvious conclusions and suggestions concerning Home Economics. First, it has come to stay. The times are propitious for its development. Whether you interpret it in terms of vocational training, industrial training, or as neither of these, but as rational education for women, some form of it is making a place for itself in the school and the home and in the thought and life of the people. Evidently it has passed the popularizing stage. School boards need no longer be bribed with hot biscuits and well broiled steaks served by the children to show how 'practical' Home Economics is. Neither is it necessary for this Association to spend much time in by-laws and constitutions; but a greater task is theirs which calls for the long view, the clear vision, and abundant labors. To each man his work. To each group its work. One thing really *well* done, so shall Home Economics grow in public favor and educational value. You know the old story of Alice in the looking glass. 'In our country we run not to get ahead, but to keep up.'

There is need for research to answer the questions housekeepers

have been asking for years. We have made a mere beginning in applying to the food and nutrition of man the principles scientists tried out long ago in the feeding of lower animals.

There is a crying need for better art for all the people. Think how far we are from the ideals William Morris proclaimed years ago. Think of the monstrous bonfires resulting if just one of his numerous suggestions should be followed. 'Have nothing in your houses that you do not know to be useful or believe to be beautiful.' We have made only a beginning in putting forms of beauty in our daily life.

There is need for better economics, for wiser administration of the affairs of the home, for higher esthetic and ethical standards, for that wisdom and skill that shall enable women to see life whole and large, their place and part in it, and enable them to live above its machinery and beyond its petty details. Think for a moment of the familiar statement, Home Economics stands for a wise expenditure in the affairs of the home. What does that statement imply? That depends on several things—your definition of home. What is it? The place to go when the other places are shut? The place to sleep and eat in? The place to dress in to go somewhere else? The place in which to have company? The center about which family life revolves, to which they come for rest, comradeship and inspiration, the safeguard of the family and the state. Reduced to simplest terms its material basis is a house. This suggests architectural design and construction. For in the houses we build and furnish we give perhaps quite unconsciously our definition of home. Further it implies a knowledge of the supplies of the home—food, textile fabrics, art, metals, because there can not be wiser expenditure without knowledge. Henderson says, 'If one does not know where one wishes to go there is small chance of success in devising a process for getting there.' Also, it implies a knowledge of household processes and products. This means a knowledge of science, history, and literature.

Wise expenditure suggests a knowledge of the principles of economics. It is said three-fourths of all money expended is expended by women or for women. Why then should they not learn *how* to spend?

We have only begun to make good in the program so well outlined for us years since by former Commissioner Brown in these prophetic words: 'There will be some day preparation for mother work, for home making, for woman's leading part in the finer forms of social intercourse which will do on the higher academic plane what was

done in a more petty way generations ago in popular finishing schools for girls. There is to be further a serious preparation for woman's part in the economic, the industrial, and even the political world.' Women are in industry, in politics, today and I can but feel less confusion would have attended their entrance if there had been a training which fitted them better for these demands. We have not better brains than had our grandmothers, but the demands upon an educated woman of today and the woman of fifty years differs as greatly as the plumbing system of the modern house differs from the old oaken bucket or as simplicity differs from complexity. Home Economics is no panacea for all the ills of life, but it can do much to make a woman ready to serve in the daily tasks while she forgets not the finer things of the spirit. We are to be congratulated upon our opportunities and to go forth with a brave heart and without fear."

Announcement was made of the vote of the executive committee on the preceding evening to increase the annual dues of the Association to one dollar per annum. This action was taken in accordance with a vote at the St. Louis Convention, resting this power in the executive committee at its discretion.

The proposed amendments to the constitution and by-laws were then considered. Under the first of these a new by-law is added as follows:

SECTIONS OF AMERICAN HOME ECONOMICS ASSOCIATION.

I. Sections shall be organized subject to the approval of the council. Each section shall have its officers, consisting of chairman, vice-chairman, secretary, treasurer, and such committees as the section shall from time to time authorize.

II. Sections shall be represented on the council of the American Home Economics Association by the chairman.

III. The general Association will provide opportunity on its program for sectional meetings, will print the proceedings of sections and in every way possible encourage the development of sections.

Article IV of the constitution regarding membership of the council was amended to give chairmen of sections membership in the council by changing it so as to read: "Council shall consist of *four* classes of members" and "(4) the chairman of each section of the Association."

Under the second amendment, the relation of local associations to the American Home Economics Association was defined by adding to By-law III, Membership, a Section II on local associations.

Article III. Section II. Affiliated Local Societies. Any local organization desiring to affiliate with the American Home Economics Association shall include in its constitution the following statements: "The object of this organization is the same as that of the American Home Economics Association as stated in its constitution, Article 2. In addition, this association wishes to devote itself more specifically to the problems of Home Economics as they may develop in its local field."

The third amendment separated the offices of secretary and treasurer. Article IV of the constitution was amended in Section 1 to read: "A secretary, a treasurer," instead of "a secretary-treasurer;" and in Section 2, to read: "Secretary and treasurer," instead of "and secretary-treasurer;" and in Section 3 to read: "Six elected officers," instead of "five elected officers." Article II of the by-laws was amended to read in Section II (1): "The treasurer," instead of "the secretary-treasurer as treasurer;" and in Section II (2): "The Secretary," instead of "the secretary-treasurer as secretary."

These amendments were all adopted.

Report of the Secretary-Treasurer.—These reports were read by the acting secretary, as follows:

SECRETARY'S REPORT FOR 1911.

Office Arrangements.—At the time the Association was organized the secretary-treasurer conducted the business of the Association and JOURNAL, collecting dues, carrying on correspondence, etc. After the first two issues of the JOURNAL, the editorial work was transferred to Dr. Langworthy for the third issue and then to Mrs. Abel who has since served as editor. The secretary-treasurer continued to care for the business of the Association (address lists, collections, etc.) until into the second year when the lists and collections were transferred to the editor who added their care to the very considerable duties of editorial work already assumed. This proved an impossible burden and in the fall of 1910 the services of Mr. H. L. Knight of Washington, D. C., were secured, and an arrangement effected whereby he gave the editor such time as was at his disposal in assistance in preparing material for the printer, in seeing each issue through the press, and also as assistant treasurer undertook charge of the collection of JOURNAL subscriptions and Association dues. Meantime there has remained for the secretary-treasurer the general correspondence of the Association, preparation for meetings, and responsibility for funds. An amendment to the constitution is now proposed dividing the office of the treasurer from that of secretary, and in view of the fact that the budget is now $4500, its adoption and the selection of a separate person to bear the financial responsibility as treasurer seems wise.

Further, the time has come when the Association should take steps to organize a business office for the JOURNAL and the Association. There should also be provided a paid assistant for full time engaged in aggressive and undivided efforts to

extend the JOURNAL's subscription list and the influence of the Home Economics movement.

Membership.—The membership during 1911 has been about 1100, which is a falling off of nearly 500 from last year. The decrease is to be explained as a result of the division of the fee for the subscription to the JOURNAL from the membership fee. This division, it will be remembered, was made necessary by the regulations of the United States Post Office department governing the admission of advertising to second-class mail matter.

The membership fee during 1911 has been 25 cents and the subscription to the JOURNAL $2.00. There has been no falling off in the subscription list to the JOURNAL but on the contrary a slow but steady gain. The schedule of expenditures for the Association during 1911, amounting to $577.74, indicates that the membership fee must be raised at once from its present amount, 25 cents, to $1.00 as adopted last year.

The approximate membership, thus far, has been as follows: 1908, when the Association was organized, 700; 1909, 1250; 1910, 1500; 1911, 1100.

Publication of the JOURNAL.—The JOURNAL OF HOME ECONOMICS has been issued as a bi-monthly, in February, April, June, October, and December, 1911, including in all 527 pages. The subscription list is now upwards of 1600. The JOURNAL has been edited by Mrs. Mary H. Abel, of Baltimore, with the assistance of an associate board of editors, composed of Miss Helen Kinne, Miss Anna Barrows, Dr. C. F. Langworthy, Miss Abby L. Marlatt, Miss Isabel Bevier, Mrs. Melvil Dewey, Dr. Thomas D. Wood, and Miss Martha Van Rensselaer. The JOURNAL has been directly managed by a JOURNAL Committee, of which Mrs. Richards served as chairman until the time of her death. The remaining members of the committee, Dr. Langworthy and the secretary, have during the remainder of the year met in conference with the editor of the JOURNAL as occasion has demanded. The JOURNAL has also had the assistance of Mrs. Claudia Q. Murphy, as advertising director, and the beginning which has been made in the way of getting advertisements promises a source of revenue upon which the JOURNAL may depend.

The Conventions.—The convention of 1910 was held at St. Louis. During the summer of 1911, two sectional conventions were held, one with a program of educational topics at the San Francisco meeting of the Home Economics Association, under the chairmanship of Miss Bevier, president of the Association, who went to the Pacific Coast for this purpose. The local committees of the Coast and in San Francisco were most efficient in rendering assistance. The other summer convention was the second annual meeting of the administration section held at the Lake Placid Club, with a program on institutional administration. The question of annual meetings and summer conventions does not seem yet settled to the entire satisfaction of our members.

B. R. ANDREWS, *Secretary.*

TREASURER'S REPORT.

There was a balance of $764.00 in the general fund, on December 23, 1910. As accounts for the JOURNAL and for the Association, beginning with 1911, were to be separated, this balance was apportioned, one-ninth to the new Association fund and eight-ninths to the JOURNAL fund

I.

The Association fund started with a balance of $84.77 and had receipts of $269.50 from 1078 memberships at 25 cents each, and a balance of $27.75 from the St. Louis convention luncheon receipts, a total of $382.02 receipts. Expenditures against the Association fund amounted to $577.74, an excess of $195.72, over receipts, which excess was provided by an advance from the JOURNAL fund. The expenditures of the Association fund, totaling $577.74, as noted, were divided as follows: Convention expenses: St. Louis, $200.12, San Francisco and Lake Placid (summer of 1911) $181.05, Washington, $11.77; making a total for conventions of $392.94. Secretary's expense, including postage, etc., $78.75; assistant treasurer's expense, collecting dues, etc., $64.80; treasurer's bonds, $15.00; flowers for Mrs. Richards' funeral, $25.00; and refunds on excess payments, $1.25; making total expenditures for the Association fund, $577.74.

Certain outstanding bills against the Association fund indicate that the total deficit in the Association fund for 1911 is approximately $255.53.

II.

The JOURNAL *Fund.*—The receipts include a balance, share from the general fund, December 23, 1910, of $679.23, and receipts from subscription fees of $2974.60, sale of reprints, $123.00, advertising $5.00, and contributions for the November, 1910, issue from Mrs. Richards, $300.00; total receipts for the JOURNAL fund, $4081.83. The expenditures against the JOURNAL fund include for printing the JOURNAL, $2256.35; the office and editorial expenses of the assistant treasurer, for editing the JOURNAL, collecting subscriptions, etc., $724.40; advertising the JOURNAL, $15.75; JOURNAL committee, $45.32; editor's expense, $78.74; advertising director's expense, $39.25; office equipment bought, $78.50; bank charges and refunds, $6.20; a total expenditure from the JOURNAL fund of $3244.51. In addition, there has been advanced from the JOURNAL fund to the Association fund, $195.72, leaving a cash balance in the JOURNAL fund, December 10, 1911, of $641.60.

There is still to be collected $300.00 for advertisements for the JOURNAL, which with the cash balance makes a total of resources on December 10, 1911, of $941.60. On the same date there were bills payable amounting to $398.68, thus leaving an estimated real balance of $542.92.

III.

The Administration Section has a fund of $29.90 on deposit with the general Association.

IV.

Permanent Fund.—The Association has on deposit $150.00, the proceeds of three life memberships.

B. R. ANDREWS, *Treasurer.*

Subsequently the auditing committee, consisting of Miss Bevier, Miss Martha Van Rensselaer, and Miss Caroline L. Hunt reported the accounts of the treasurer had been examined and found correct. This report was accepted.

Committee on the Memorial Fund.—In the absence of Mrs. Barrett, chairman, Dr. C. F. Langworthy reported informally that unforeseen delays had necessitated the postponement of the raising of the fund from November, 1911, till some period after the holidays. The preliminary work of organization, collection of names, etc., has made good progress and it is expected that the active solicitation will soon be vigorously prosecuted.

Committee on Entrance Requirements.—Miss Jenny H. Snow, chairman, reported that the committee had continued its endeavors to formulate a unit of work in food for college entrance requirements. Three tentative outlines had been considered but no final agreement reached in the matter. The committee was continued with the following personnel: Miss Snow, chairman, Miss Edna D. Day, Miss Louise Stanley, Miss Alice H. Craig, and Miss Ella J. Spooner.

Adjourned Meeting.

The business session was resumed at 11:00 a.m., December 29.

Committee on Affiliated Societies.—Miss Van Rensselaer reported informally on the progress being made in organizing affiliated societies. A questionaire showed a general movement in this direction all over the country. The committee urged that all such societies actively support the Journal. This report was accepted.

Committee on Journal.—Mrs. Abel summarized the work of the year and described some of the difficulties with which the editor has had to contend. The need of an organized trained force was especially emphasized and an earnest appeal made to all members of the Association for continued support.

On motion of Miss Isabel Ely Lord, seconded by Miss Adelaide Nutting, a rising vote of thanks was accorded Mrs. Abel in appreciation of "her valuable and invaluable service as editor of the Journal."

Committee on Legislation.—In the absence of Dr. Andrews, chairman, a report of progress was submitted by Miss Anna Barrows. In this report a brief description was given of five bills pending in congress which concern Home Economics education, viz., the Page bill (Senate No. 3), the Wilson bill (House No. 1312), the Smoot bill (Senate No. 1369), the McLaughlin bill (House No. 15256), and the Lever bill (House No. 11542). The committee recommended that each member of the Association secure copies of these bills from their representatives in Congress and after a comparative study of their merits write Senators and Members of Congress concerning them.

This report was accepted and the committee continued with the following organization: Dr. Andrews, chairman, Miss Rosa Bouton, Miss Anna Barrows, Mrs. Robert M. La Follette, and Miss Jessie M. Hoover.

Committee on Nomenclature on Home Economics.—This report, which had been presented and adopted by the department of manual training and Art of the National Education Association at San Francisco, July 13, 1911, was presented by Dr. A. C. True, director of the Office of Experiment Stations, U. S. Department of Agriculture. The report is as follows:

(1) In the judgment of the committee, the term Home Economics should be used to designate the subject as a whole wherever it is taught, qualified only by the terms elementary, secondary, and higher as commonly applied to courses of instruction of different grades.

It was moved that the definition of Home Economics formulated by the committee of the Association of Agricultural Colleges and Experiment Stations on college courses in Home Economics be adopted. See (2).

(2) *Definition.*—Home Economics, as a distinctive subject of instruction, includes the economic, sanitary, and esthetic aspects of food, clothing, and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people.

(3) *Instruction.*—Instruction in this subject should be based on the laws of the physical, biological, and sociological sciences. The presentation should be graded according to the maturity, attainment, and purposes of the students.

(4) *Aim.*—(a) Elementary Schools. In the elementary schools, the central thought should be the acquiring of skill.

(b) Secondary Schools. In the secondary schools, while the work should lead to greater skill, it should also develop "the reason why" and cultivate the scientific method of thought by means of experiment. To this end, it should be correlated carefully with the work in other subjects so as to economize the time of teachers and students.

(c) Higher Institutions. In higher institutions while skill and applied science and art are fundamental in the instruction, there should be the broader scientific, economic, and sociologic view and whenever practicable, the development of research.

[Signed] ELIZABETH C. SPRAGUE, *Acting Secretary.*

Dr. True explained that this report represented the joint action of the committee on instruction in agriculture of the Association of American Agricultural Colleges and Experiment Stations and the committee on nomenclature of the American Home Economics Association and had met with general approval at the San Francisco meeting. The report was intended to run along somewhat general lines with a view to reaching agreement on what should be included in the general sub-

ject of Home Economics and then by what name it should be designated.

Considerable discussion developed with reference to that section dealing with the scope of instruction in the elementary schools. The suggestion was made that the term "intelligent skill" should be used, but a number of speakers pointed out that skill implies intelligence. The report was adopted as a whole, and the committee continued with the following personnel: Dr. True, chairman, Miss Rosa Bouton, Miss E. C. Sprague, Miss Mary Wright, and Miss Abby L. Marlatt.

Adjourned Meeting.

The final business session was held December 30, at 11:00 a.m.

Committee on Graduate School.—A verbal report was presented by Dr. Langworthy at the request of Mrs. Alice P. Norton, chairman. The formal report is as follows:

At the close of the session of the Graduate School of Home Economics at Ames, Iowa, in the summer of 1910, the following resolution was passed:

"Inasmuch as the agricultural colleges constitute the largest group of collegiate grade in the United States giving courses in Home Economics we, the Graduate School of Home Economics, request that in planning the work in the future, the Graduate School of Agriculture offer a section of Home Economics that the needs of the women students be as fully met as those of the men.

"The Graduate School of Home Economics, after several years of separate organization, has become a part of the American Home Economics Association, and can assure the Graduate School of Agriculture that the American Home Economics Association will coöperate in every way and will work for the benefit of the Home Economics section which we hope may be formed."

Your committee has been informed that the committee having the Graduate School of Agriculture in charge has decided that courses of instruction in Home Economics can not be provided by the school, in addition to its course in agriculture, since the demands for strictly agricultural work are fully as great as available resources will provide. However, the Graduate School of Agriculture is in sympathy with the objects and aims of the Graduate School of Home Economics, and will coöperate with the school along the same lines as heretofore, provided it is held at the same time and place as the Graduate School of Agriculture.

At the Third Annual Meeting of the American Home Economics Association in St. Louis, it was decided that the next session of the Graduate School of Home Economics should be held at the Michigan Agricultural College, East Lansing, Michigan, in July, since the Graduate School of Agriculture is to be held at that place during the whole of that month, and that the period be selected in which the program of the Graduate School of Agriculture offers the most which would be of interest to the Graduate School of Home Economics. Your committee has made its plans accordingly and hopes that the school will be a worthy successor to the schools held at the University of Illinios, at Cornell University, at the Agricultural College

at Ames, and that it may even in a somewhat different form reproduce the spirit and some of the features of the meeting held in 1902, at Wesleyan University, Middletown, Conn., which is the real parent of the Graduate School of Home Economics.

As regards courses of instruction, Dr. C. E. Marshall of the bacteriology department and Prof. Frank S. Kedzie of the chemistry department of Michigan Agricultural College are ready to offer lectures and laboratory work in their subjects. It is believed that even in the short duration of the school, such laboratory courses will be helpful to the advanced student in illustrating modern methods of work. If additional laboratory work is desired, it is possible that arrangements can be made to continue it throughout the whole month of July.

The course of animal physiology offered in the Graduate School of Agriculture will include much that will be of interest to students of Home Economics. The lecturers include Professor Pearl of the Maine Experiment Station, Professor Mendel of Yale, Professor Koch of Chicago, Professor Forbes of the Ohio Experiment Station, and Professor Sherman of Columbia. It is hoped that Professor Hoffman-Bang of Copenhagen will also be present. Every effort will be made to induce as many of these men as possible to give at least one lecture on the special problems of Home Economics.

Dr. Langworthy, Professor Bevier, President of the American Home Economics Association, and others have consented to present papers, and it is hoped that many others who are not only teachers but investigators will present results of their research work. Your committee suggests that one special purpose of the Graduate School for this year be to familiarize the students with the latest results of such work.

The committee would like the opinion of the Association in regard to this. They also wish the judgment of the Association in regard to the length of the school. The School of Agriculture meets from July 1 to 26, and it has been suggested that the School of Home Economics might extend its session from two to four weeks. This would make laboratory work more worth while, and would make it possible to avail ourselves more completely of the advantages offered by the School of Agriculture.

[Signed] ALICE P. NORTON, *Chairman*.

Before this report was presented to the annual meeting, a meeting of the Graduate School committee was held, at which Dr. A. C. True, dean of the Graduate School of Agriculture, was also present. At this meeting, later information was available regarding the possibility of coöperation on the part of the Michigan Agricultural College and some suggestions were made regarding additional work which would prove acceptable to the college, namely, a strong course in textile technology. Suggestions were also made for amplifying the project for presenting results of research work by a course of instruction designed to familiarize the students with the selection of problems for research, and the methods followed in the study of such problems, and which would in general familiarize the students with the objects sought and means employed in the independent study of scientific problems. It was the sense of the meeting that the Graduate School

of Home Economics should be limited to two weeks in July but that arrangements should be made, if possible, by which students who so desire may continue laboratory work throughout the entire month.

The business transacted by the committee was outlined and the report of the Graduate School of Home Economics accepted. The committee to be in charge in 1912 was announced as follows: Mrs. Alice P. Norton, chairman, Miss Edna D. Day, Miss Abby L. Marlatt, Miss Martha Van Rensselaer, Miss Maude Gilchrist, Miss Agnes Hunt, Dr. C. F. Langworthy, and Dr. L. B. Mendel.

Following brief remarks by Dr. Mary Walker, and the announcement by the President of an invitation from the Fifteenth International Congress of Hygiene and Demography, to be held in Washington D. C., September 23–30, 1912, to attend and contribute papers, the position of the Association with reference to Federal legislation was further set forth by the President. A resolution endorsing pending legislation providing Federal aid to secondary schools for training in Home Economics, agriculture, and the trades and industries was presented and referred to the committee on legislation.

Committee on Resolutions.—Miss Craig reported resolutions which were adopted expressing the deep appreciation of the Association of the hospitality offered by the Home Economics Association of Washington, D. C., and the efficient, courteous, and never-failing service of the local committee in charge of the convention; thanking the School Board of Washington for the use of the Henry D. Cooke School, Superintendent Davidson for his interest and assistance, and Janitor Price for his efficient care of the building during the convention; and expressing the appreciation of the Association for the hospitality extended by Mrs. William H. Taft, Mrs. Franklin MacVeagh, and Mrs. Robert M. La Follette, and also to the trustees of the Corcoran Gallery of Art, the Cornell Women of Washington, and the Eistophos Club. By another important resolution the Association placed itself on record as desirous of favoring in all possible ways the cause of pure textiles, and authorized the appointment of a committee to report at the next annual meeting as to progress, both legislative and educational, in this direction, and to give all possible publicity to the facts necessary for an intelligent discussion of textile adulteration.

A resolution urging a health regulation for all cities compelling the proprietor of every public eating house to light the kitchen so as to illuminate all parts thereof, and install between the kitchen and dining room a glass partition which would afford an uninterupted view of the

kitchen was also presented, but laid on the table for further consideration.

Miss Nutting explained the work of the Administration Section of the Association, particularly as to school luncheons.

Election of Officers.—The nominating committee, through Dr. H. C. Sherman, chairman, presented the following nominations for terms of one year: President, Miss Isabel Bevier, University of Illinois; first vice-president, Dr. C. F. Langworthy, U. S. Department of Agriculture, Washington, D. C.; second vice-president, Miss Martha Van Rensselaer, Cornell University; third vice-president, Miss Abby L. Marlatt, University of Wisconsin; secretary, Dr. B. R. Andrews, Teachers College; treasurer, Howard L. Knight, Washington, D. C.; and member of the council (vice Miss Marlatt), Miss Agnes Harris of Florida. For terms of five years were nominated the following as members of the council: Miss Ellen A. Huntington of the Agricultural College of Utah, Catherine J. McKay of Iowa State College, Miss Louise Stanley, of the University of Missouri, Miss Mary L. Tuttle of Pratt Institute, and Mrs. Mary P. Van Zile of the Kansas State Agricultural College; as a member of the nominating committee Miss Emma S. Jacobs of the Public Schools of Washington, D. C. Miss Caroline L. Hunt was nominated to the council for four years to fill the vacancy caused by the death of Mrs. Richards.

These nominations were accepted and the nominees duly elected.

The convention then adjourned, *sine die.*

H. L. KNIGHT, *Acting Secretary.*

PROGRAM OF THE FOURTH ANNUAL CONVENTION, AMERICAN HOME ECONOMICS ASSOCIATION.[1]

WASHINGTON, D. C., DECEMBER 27–30, 1911.

WEDNESDAY, DECEMBER 27.

2:30 p.m. Meeting of Executive Committee, Hotel Gordon.

3:30 p.m. Meeting of Council, Hotel Gordon.
Reports of affiliated societies.

THURSDAY, DECEMBER 28.

9:30 a.m. Convention called to order by the President of the Association, Miss Isabel Bevier, University of Illinois.
Address of welcome by Dr. W. M. Davidson, Superintendent of Public Schools, Washington, D. C.
Response by Miss Bevier.

[1] Papers read by title will be listed in the April JOURNAL.

Action on proposed amendments to constitution and by-laws.
Reports of officers.
Reports of Committees:
(1) Committee on Ellen H. Richards Memorial Fund, Mrs. Caroline Weeks Barrett, Chairman; (2) Report of Committee on Entrance Requirements, Miss Jenny Snow, Chairman, University of Chicago.

10:30 a.m. Papers:
Applied Science—Its Place in the Curriculum of a College of Liberal Arts for Women:—1. Bio-Chemistry, Mary Louise Foster, Instructor in Chemistry, Smith College. 2. Chemistry, Miss Katherine Blunt, Ph.D., Department of Chemistry, Vassar College.
Metabolism Experiments—Alice F. Blood, Ph.D., Assistant Professor of Chemistry, Simmons College.
Some Chemical Differences Between Short and Long Process Breads, Miss N. E. Goldthwaite, Ph.D., Assistant Professor of Household Science, University of Illinois.

1:30 p.m. Paper: Some Important Considerations in the Feeding of Young Children, Professor E. V. McCollum, University of Wisconsin.
Round table: "The Elementary Work in Preparation of Food in College Classes," Miss Bevier, Chairman; papers by Miss May B. Van Arsdale, for Department of Foods and Cookery, School of Household Arts, Teachers College; Miss Catherine Mulligan, University of Tennessee; Mrs. Mary Pierce Van Zile, Kansas Agricultural College; Miss Ruth Atwater and Miss Jessie A. Long, Pratt Institute; and others.

3:00 p.m. Complimentary cavalry drill at Fort Myer.

4:00 p.m. Mrs. W. H. Taft received the ladies of the American Association for the Advancement of Science and affiliated societies at the White House.

5:00 to 7:00 p.m. The Cornell Women of Washington gave a tea to visiting ladies at the home of Mrs. Frederick A. Holton.

8:00 to 10:00 p.m. Reception by the Trustees of the Corcoran Art Gallery to the delegates and members at the Corcoran Art Gallery.

FRIDAY, DECEMBER 29.

9:00 a.m. Round table on Domestic Art Instruction for College Students.
General Topic: "After Some Years of Experimentation What is the Educational Aim, Method, and Accomplishment in College Courses in Domestic Art?" Miss Agnes Houston Craig, Director of Domestic Art, College of Industrial Arts, Denton, Texas, Chairman. (1) From the Viewpoint of Science, Miss Ella Josephine Spooner Instructor in Domestic Art, Simmons College, Boston, Mass. (2) Through Its Economic Interests, Miss Gertrude Van Hoesen, Instructor in Household Art, Chicago University, Chicago. (3) Esthetically Considered, Miss Mary Wynne Shackleford, Director of Fine and Industrial Arts, College of Industrial Arts, Denton, Texas. (4) Technical Instruction, Miss Ruth Wilmot, Instructor in Domestic Art, Pratt Institute, Brooklyn, N. Y. Discussion: (1) Scientific and Economic Phases, Miss Anna F. Blohm, Instructor in Domestic Arts, Ohio State University.
Recommendations from the floor; Better Organized and More Unified Courses in Domestic Art.

11:00 a.m. Business Session of Association.

Reports of Committees (continued): (3) Report of Committee on Affiliated Societies, Miss Martha Van Rensselaer; (4) Report of Committee on JOURNAL, Mrs. Mary H. Abel, Editor, Discussion; (5) Report of Committee on Legislation, Dr. B. R. Andrews, Chairman; (6) Discussion of Report of Committee on Nomenclature in Home Economics, Dr. A. C. True, U. S. Department of Agriculture.

12:30 p.m. Convention Luncheon, Hotel Gordon.

3:30 p.m. Session in charge of Administration Section of the Association, Miss Adelaide Nutting, Teachers College, Columbia University, Chairman.

Topic: "School Lunch Rooms, Their Equipment, Organization, and Function," Elementary School Lunch Rooms. Miss Mabel H. Kittredge, Chairman of School Lunch Committee of Public Education Association in New York City. High School Lunch Room: (A) Mrs. Mary H. Moran, New England Kitchen, Boston; (B) Miss Emma Smedley, William Penn High School, Philadelphia. A Cafeteria for College Students, Miss Arnold, Cornell University.

4:00 to 6:00 p.m. The Eistophos Science Club of Washington was at home to visiting ladies at the Tea Cup Inn.

Mrs. Franklin MacVeagh was at home to visiting ladies.

8:00 p.m. Public Meeting of American Home Economics Association.

"Education and Home Economics," with address of welcome, Philander P. Claxton, U. S. Commissioner of Education.

Response: Miss Isabel Bevier, President of American Home Economics Association.

Paper: Home Economics and Culture, Mrs. Mary Hinman Abel, Editor of JOURNAL OF HOME ECONOMICS.

9:00 to 10:30 p.m. A reception was given to the American Home Economics Association by the Home Economics Association of Washington, D. C.

SATURDAY, DECEMBER 30.

9:30 a.m. Paper: A Course on the History of the Household. Miss Willystine Goodsell, Assistant Professor, Teachers College, Columbia University.

Round table: Miss Bevier, Chairman, Extension Education in Home Economics: (1) in Kansas, Mrs. Mary P. Van Zile, Kansas Agricultural College; (2) In Minnesota, Miss Mary L. Bull, University of Minnesota.

Effect of School Feeding on the Physical and Mental Development of the Child, Miss Alice C. Boughton, Philadelphia, Pa.; Miss Louise Stevens Bryant, Philadelphia.

12:00 Concluding Business Session. Report of the Graduate School, Mrs. Alice P. Norton, Chairman. Report of Committee on Resolutions. Report of Nominating Committee.

Adjournment.

8:00 p.m. Mrs. Robert M. La Follette was at home to visiting ladies.

MEETING OF THE COUNCIL.

The council of the American Home Economics Association met at the Hotel Gordon, Washington, D. C., Wednesday, December 27, 1911, at 3.30 p.m., with President Bevier in the chair.

The proposed amendments to the constitution and by-laws were laid before the council, and after discussion referred to the business meeting of the Association. The question of the amount of membership dues for 1912 was discussed, and attention was called to the action of the Association at the business meeting of the St. Louis convention, providing that the dues should be $1.00, whenever authorized by the executive committee. This action was judged final, and the increased dues ordered put into effect at once.

The treasurer's report was presented (see page 95) and made the basis of a discussion as to the activities of the Association. The finance committee reported as follows: "As not one of the finance committee is a member of the executive committee and only one belongs to the council, it considers itself incompetent to outline financial policy, or to make recommendations which might prove unwise and inexpedient. It therefore begs leave to ask that it be discharged and a new committee be appointed from the executive committee." On motion, after discussion, the report was adopted.

On motion, it was voted that the chair appoint a committee of three on constitution and by-laws, to consider changes in the constitution and by-laws and also needed rules of procedure for committees. The president later appointed Miss Nutting, Miss Talbot, Miss Marlatt.

The matter of local societies and their relation to the general association was brought up for discussion. Miss Van Rensselaer, of the committee on affiliated societies, reported on the general situation, and upon the New York Association in particular. Miss Gilchrist presented a report for the Michigan Home Economics Association; Miss Craig spoke of plans for a State Association in Texas; and Miss Elliott presented the report of the New England Home Economics Association. The need of organized effort for the development of local associations was urged and it was moved and voted, after discussion, that the executive committee appoint a committee of five on publicity and organization to study ways and means of increasing membership, of developing local associations, and of promoting the JOURNAL.

The suggestion was made that a central office for the Association and JOURNAL be organized, at which a person should be employed for full time as an office secretary and assistant to the editor, (1) to carry on the office work of the Association, collect dues, handle correspondence, etc., and (2) to collect subscriptions for the JOURNAL, canvass for new subscriptions, give assistance to the editor of the JOURNAL, and in general actively advance the interests of the Association and the JOURNAL. Such a person, it was pointed out, could assist in many of the forward movements which the committee on publicity and organization might outline. On motion, duly seconded, after discussion it was voted to recommend to the executive committee the organization of a central office for the JOURNAL and the Association, with a full-time assistant in charge.

Mrs. Stannard, of the New England Association, reported the provisional plan of that association for a Home Economics bureau of information, in Boston, which would serve that section.

On motion, the meeting of the council adjourned.

B. R. ANDREWS, *Secretary.*

EDITORIALS.

Lake Placid Meeting of Administration Section.

The second annual meeting of the Administration Section, the papers and discussions of which are presented elsewhere in this issue, marked a decided advance over the first meeting. Those who attended the gathering at Lake Placid were struck with the fact that there were in attendance a considerable number of persons professionally interested in the administration of large public institutions.

This made possible one of the most interesting and valuable sections in the program, a detailed discussion of systems of buying. The presence of Mr. Wright, of the State Charities Aid Association, who had recently completed an authoritative investigation of systems of institutional buying in New York and certain other states, placed the discussion of this topic at once upon a high level and permitted the consideration of detailed problems as to methods of ordering, receiving, storing, and administering the supplies in large institutions. Several representatives of New York state institutions were present, including certain physicians and other officials who are concerned practically with the steward's department. The ordinary contract system of purchase was discussed, and one interesting fact brought out that under certain circumstances buying in smaller quantities under direct immediate supervision has certain considerable advantages.

Another very practical topic was presented by Mrs. Dewey, with her study of institution kitchens, their equipment, organization, and administration. Mrs. Dewey had collected information by a questionaire, sent out to a large number of institutions, which had called forth statements of many important problems. One of the most interesting was that of the standard unit-kitchen for large institutions, whether the best efficiency is found by limiting each kitchen to a service of 150 people, or 200 people, or some larger number. The problem, as outlined, is one worthy of most careful and painstaking study, and one cannot but wish that some scientific agency, like the Sage Foundation, might devote some of its funds to the determination of this and similar problems which underlie efficiency and human welfare in institution life.

The topic of lunchrooms was treated by Miss Arnold, of Cornell University, who has had a remarkable experience in organizing a cafeteria for students, and who made plain that it is impossible to devote too much care and skill in this field, to the end that students may not only have nourishing food, but at the lowest possible price, in view of the narrow margins of expenditure upon which most students finance their college education. The problem of the institution lunchroom, as Miss Arnold explained, was seen to fall in with all that is being urged in these days for the protection of human welfare and the conservation of human energy. Miss Sanborn brought another experience to bear upon the same problem from the industrial lunchroom, in which she had had an unusually successful experience in the city of Toronto.

That there may be ultimately a science of institutional organization and administration was evident in the presentation by Mr. Dewey of record charts showing standards and measurements of performance in this field. The inventive genius, for it is no less, which Mr. Dewey has shown in the organization of the library field, is now finding a most happy expression in the development of controlling records and accounting forms for the institution household. Another interesting contribution was that of Dr. Langworthy, who presented the many sources of information for the institution worker in the wealth of government and municipal documents and reports.

One of the most striking items on the program was Dean Arnold's address on the Essentials in the Selection and Preparation of Students for Administrative Work. She made plain what every thoughtful institutional worker appreciates, that one who would go into institution service must be ready to undertake responsibilities for life and welfare which are of a graver nature than those which confront the schoolroom teacher. There are needed qualifications of judgment and maturity, as well as of learning and training, if the responsibilities are to be safely intrusted. Dean Arnold urged that only as our training institutions are able to include a model demonstration dormitory, in which the students can themselves undertake responsibilities for the general housekeeping, the commissary, and other departments, placing themselves under real tests in real situations, can the training in institution management become a real preparation. The medical college without the hospital, the school of education without its affiliated elementary school for experimentation and practice teaching, would be no more an anomaly than our present courses for training

institution workers which are being organized without adequate opportunity for real field work. Not observation alone, but actual practice work under teaching supervisors of ability, is absolutely essential in the preparation of institution workers.

Taken all in all, the meeting at Lake Placid last summer not only marked progress over the meeting of the preceding year, but it definitely set up as a standard agreed to by persons concerned with practical teaching and with practical institution administration alike, that the whole field of institution management can be and must be reduced to system and order, and made available to the person entering it as a profession, not through blind apprenticeship, but through training in professional courses which shall combine the necessary foundation in science with actual apprentice practice under supervision.

Increased Fee for Membership.

By vote of the Council, which held its annual meeting on December 27, the fee for membership in the American Home Economics Association, beginning with 1912, has been raised to $1. The reason for this decision is the simple one that the present income does not pay the expenses of the Association. The income from membership fees has been $269.70. The expenses have been $577.74. The largest outgo is for the annual meeting, and a considerable sum has also been used in paying part of the expenses of the two meetings held last summer, one in San Francisco, the other at Lake Placid, N. Y. The deficit has been made up by an advance from the funds of the JOURNAL. There are other urgent calls on the treasury which we are not able to meet; it is important for instance that certain committees, such as that for affiliated societies, should have sums of money to use for development. If there were money to be expended in certain directions, without doubt the Association could be greatly enlarged as to membership and its influence more widely extended.

Members of the Association will receive as formerly programs in advance for annual and other meetings and will receive reports of proceedings. Members are entitled to vote at all meetings and are eligible for election to the Council and Executive Board which attends to the business of the Association.

But it is on no such grounds of privilege that all who have been members should continue to pay the increased dues. For the continuity of the movement, it is necessary that large membership shall be loyally devoted to the ends for which the Association stands. The

present membership of about 1100 should be 1500 before the end of the year. Will all of our present members and subscribers take earnestly to heart the needs of the Association?

Corrections. The article in the December JOURNAL entitled Home Economics from the Standpoint of the Grade Teacher should have been credited to Miss Melva Latham, in charge of the seventh grade in the School of Education of the University of Chicago.

The Boston Normal School of Household Arts was organized by Mrs. Hemenway in 1886, instead of 1888, as stated (October JOURNAL, p. 339). In 1898 it was given over to the state of Massachusetts and became the Mary Hemenway Department of Household Arts of the Framingham State Normal School. In 1905 its course was extended to three years.

Back Numbers Wanted. In order to supply complete sets to libraries and others, we are still anxious to secure additional copies of the following issues of the JOURNAL: Volume 1, Nos. 1 and 2; Volume 2, No. 1; and Volume 3, No. 2. Forty cents per copy, payable either in credit on subscriptions or in cash, will be paid for the return of any of these numbers in good condition. Please notify us when sending, and state form of payment desired. Address American Home Economics Association, Roland Park Branch, Baltimore, Md.

The Richards Home Economics Fund. At an important meeting of the Ellen H. Richards Memorial Fund Committee held January 20, 1912, the fund was specifically designated the Ellen H. Richards Home Economics Fund, and its object defined as the application of the results of scientific investigation for advancing the interest of the home. The immediate purpose as decided is to establish permanently the JOURNAL OF HOME ECONOMICS, the one scientific journal devoted to advanced housekeeping, and upon which Mrs. Richards was engaged at the time of her death; other objects contemplated are investigation, publication, fellowships, lectureships, etc. The selection of permanent trustees was considered and plans outlined for an active campaign for soliciting funds which it is expected will be under full headway by the time the JOURNAL reaches its readers. Mrs. William H. Barrett, 108 Johnson Street, Brooklyn, N. Y., is chairman of the committee, and Dr. Benjamin R. Andrews, Teachers College, New York City, secretary-treasurer.